

February 6, 1996

Jennifer Eberle Hazardous Materials Specialist Alameda County Health Care Services Agency 1131 Harbor Bay Parkway, 2nd Floor Alameda, CA 94502



Dear Ms. Eberle:

SITE INVESTIGATION REPORT, BUILDING C401, 2277 7TH ST. SUBJECT: (Port Contract # 94265)

Enclosed please find the site investigation report for Building C-401, 2277 7th St. Alisto Engineering Group prepared the report on behalf of the Port.

If you have any questions, please feel free to contact me at 272-1220.

Sincerely,

Dan Schoenholz

Associate Environmental Scientist

Enclosure

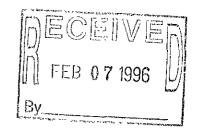
cc(w/enclosure):

Don Ringsby, Dongary Investments

Rich Hiett, RWQCB

(w/o enclosure): Brady Nagle, Alisto Engineering

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SITE INVESTIGATION REPORT

Port of Oakland Building C-401 2277 Seventh Street Oakland, California Songl

Project No. 10-270

January 1996



SITE INVESTIGATION REPORT

Port of Oakland Building C-401 2277 Seventh Street Oakland, California

Project No. 10-270-01-006

Prepared for:

Port of Oakland 530 Water Street Oakland, California

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January 30, 1996

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CONTENTS

1.0	INTRODUCTION	1
	1.1 Purpose and Scope of Work	1
2.0	FIELD METHODS	4
	 2.1 Soil Boring/Temporary Well Installation and Sampling 2.2 Monitoring Well Installation and Construction 2.3 Monitoring Well Development and Sampling 2.4 Groundwater Level Monitoring and Well Surveying 	4 5
3.0	SITE GEOLOGY AND HYDROGEOLOGY	6
4.0	ANALYTICAL METHODS	7
5.0	LIQUID-PHASE HYDROCARBON MONITORING AND RECOVERY	7
6.0	DISCUSSION OF RESULTS	7
REFE	RENCES	
TABL	ÆS	
1	Summary of Results of Monitoring Well Sampling	
2	Summary of Results of Soil Sampling	
3	Summary of Results of Temporary Well Sampling Summary of Results of Sampling Monitoring Wells - Dongary Investments	
4	Property	
5	Liquid-Phase Hydrocarbon Removal Status	



CONTENTS (Continued)

FIGURES

1	Site Vicinity Map
2	Site Plan
3	Potentiometric Groundwater Elevation Contour Map - September 6, 1995
4	Potentiometric Groundwater Elevation Contour Map - September 28, 1995
5	Hydrogeologic Cross Sections A-A' and B-B'
6	Concentrations of Petroleum Hydrocarbons in Groundwater - September 6, 1995
7	Concentrations of Petroleum Hydrocarbons in Groundwater - September 28, 1995
8	Interpreted Extent of Liquid-Phase Hydrocarbons in Groundwater

APPENDICES

	·
A	Aerial Photographs
В	Well Installation Permit
C	Field Procedures for Drilling, Soil Sampling, and Groundwater Monitoring Well
	Installation
D	Boring Logs and Well Construction Details
Ε	Field Procedures for Groundwater Monitoring Well Development and Sampling
F	Groundwater Monitoring Well Development and Sampling Field Survey Forms
G	Well Elevation Survey Map
H	Field Procedures for Chain of Custody Documentation, Laboratory Reports, and
	Chain of Custody Records



1.0 INTRODUCTION

Alisto Engineering Group was retained by the Port of Oakland to perform a site investigation at the Port of Oakland, Building C-401, 2277 Seventh Street, Oakland, California. The work was performed under Work Order No. 201867, dated April 10, 1995. A site vicinity map is shown on Figure 1.

1.1 Purpose and Scope of Work

This work was performed to assess the nature and extent of petroleum hydrocarbons in the subsurface soil and/or groundwater at the site and to comply with the requirements of the regulatory agencies. The scope of work, as outlined in the work plan dated March 30, 1995 (Alisto 1995a), included the following:

- Drilled and logged 11 exploratory soil borings/temporary wells, SB-7 through SB-17, and collected soil and grab groundwater samples.
- Analyzed the soil and grab groundwater samples for specific hydrocarbon constituents.
- Based on the results of the soil and grab water sampling, installed five monitoring wells, MW-4 through MW-8.
- Developed the monitoring wells and surveyed the location and wellhead elevation relative to the wells at the adjacent property at 2225 Seventh Street.
- Sampled the monitoring wells concurrently with wells at 2225 Seventh Street.
- Analyzed the soil and groundwater samples for specific hydrocarbon constituents.
- Evaluated the data and analytical results and prepared this report.

The above tasks and related field and sampling activities were performed in accordance with the requirements of the Alameda County Flood Control and Water Conservation District (Zone 7), Alameda County Health Care Services Agency, and the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB).

1.2 Site Description and Background

The Port of Oakland property, which includes Building C-401, is leased to SeaLand Services, Inc. Adjacent and to the east of the SeaLand lease property is 2225 Seventh Street, which is owned by the Port of Oakland, leased by Dongary Investments, and subleased by NW Transport Services and SeaLand Services. The northern property line of the site borders the railroad tracks of Southern Pacific Railroad and Bay Area Rapid Transit. A site vicinity map is shown on Figure 1, and aerial photographs showing past and present land uses are

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included in Appendix A. Pertinent background information on each of the properties is summarized in the following section.

SeaLand Lease, 2277 Seventh Street, Oakland

In September 1993, four underground storage tanks immediately to the south of Building C-401 were removed from the site. The two 10,000-gallon tanks (CF-17 and CF-18) were used to store gasoline; one 500-gallon tank (CF-19) was used for storage of waste oil; and one 300-gallon tank (CF-20) was apparently used to store diesel and oil. During removal, the tanks were visually inspected and observed to have no holes (Uribe and Associates, 1994a).

Analysis of soil samples collected during tank removal detected up to 1700 milligrams per kilogram (mg/kg) total petroleum hydrocarbons as gasoline (TPH-G) and 5500 mg/kg total petroleum hydrocarbons as diesel (TPH-D). Benzene, toluene, ethylbenzene, and total xylenes (BTEX) were detected in the soil samples at concentrations of up to 6.7 mg/kg benzene. Total petroleum hydrocarbons as oil (TPH-O) and total oil and grease (TOG) were not detected above the reported detection limits in the soil samples. Up to 1600 mg/kg TPH-G, 6700 mg/kg TPH-D, and 5.7 mg/kg benzene were detected in the soil samples collected at the limits of overexcavation. Analysis of grab groundwater samples collected from the tank cavities detected up to 180 milligrams per liter (mg/l) benzene (Uribe and Associates, 1994a).

In May 1994, six soil borings, SB-1 through SB-6, were drilled for soil sampling. Three additional soil borings were drilled and converted into groundwater Monitoring Wells MW-1 through MW-3. TPH-D was detected in all the groundwater samples collected from the soil borings and monitoring wells. Separate-phase product was observed at thicknesses of 0.18 foot in Monitoring Well MW-1 and 6.88 feet in MW-3. Analysis of the groundwater sample collected from MW-2 detected 87 micrograms per liter (ug/l) TPH-G and 470 ug/l TPH-D, however, BTEX constituents were not detected above the reported detection limits. A product sample collected from MW-3 was characterized as diesel fuel (Uribe and Associates, 1994b).

The monitoring wells were again sampled in March 1995, and liquid-phase hydrocarbons were observed in MW-1 and MW-3 and dissolved-phase petroleum hydrocarbons were detected in MW-2. TPH-G and BTEX constituents were not detected in the water samples (Alisto 1995b).

Review of historical aerial photographs of the site and surrounding area showed a former aboveground tank to the east of the property, adjacent to the railroad turntable. This aboveground tank is visible in photographs from 1947 through 1959. In the photograph dated (May 1971, the aboveground tank was no longer present, and an excavation was visible near the same location as depicted on Figure 2. This excavation was present in various configurations until 1989, however, in the 1992 aerial photograph, the excavation was no longer visible (Pacific Aerial Surveys, 1949-1989). A review of files at the RWQCB did not reveal information on the contents of the aboveground tank or the duration the

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excavation cavity remained open. Additionally, the site is not on the RWQCB list of reported fuel leaks.

Dongary Investments Lease: SeaLand and NW Transport Subleases, 2225 Seventh Street, Oakland

In 1989, one of the seven 20,000-gallon underground diesel storage tanks at the former ANR Freight sublease property (currently the NW Transport sublease property) failed a tank integrity test. Soil and grab groundwater samples were collected around the tanks for laboratory analysis. Based on the results of the soil and groundwater analysis, the tank that failed the integrity testing was removed in March 1990. Petroleum hydrocarbons were detected in the soil samples collected from the excavation below the former tank location (Ramcon, 1993).

In July 1992, one bulk oil and the six remaining diesel storage tanks were removed from the ANR Freight subleased property. The diesel storage tanks were observed to have no holes, but one hole was observed in the bulk oil tank. Concentrations of TPH-D detected in the 16 soil samples collected from the diesel tank excavation averaged 28000 mg/kg. Liquid-phase hydrocarbons were observed in the diesel tank excavation, the location of which is shown on Figure 2 (Ramcon, 1993).

In August 1992, a 2000-gallon waste oil tank was removed from the SeaLand subleased property, with no holes observed in the tank. Soil samples from the waste oil tank pit were analyzed and concentrations of benzene, TPH-D, TPH-O, halogenated volatile organic compounds, and semi-volatile organic compounds were detected (Ramcon, 1993). The location of the former waste oil tank is shown on Figure 2.

Soil Borings BH-1 through BH-16 were drilled in December 1992, and soil samples were collected for chemical analysis. During drilling and sampling, liquid-phase petroleum hydrocarbons were observed in BH-4, BH-5, BH-7, BH-8, and BH-11. Analysis of soil samples collected from the borings detected TPH-D at concentrations ranging from 42 to 7400 mg/kg in six soil samples, and TPH-O at concentrations ranging from 16 to 77 mg/kg in four soil samples. TPH-G and BTEX constituents were not detected above the reported detection limits. Borings BH-15, BH-16, and BH-13 were subsequently converted into Monitoring Wells MW-1, MW-2, and MW-3. Analysis of groundwater samples collected from the monitoring wells did not detect TPH-D, TPH-O, or BTEX above the reported detection limits. However, analysis of the groundwater sample collected from MW-1 detected volatile organic compounds (Ramcon, 1993).

On May 23, 1995, eight temporary wells, GP-1 through GP-8, were installed onsite. Of the 16 soil samples collected from the borings, TPH-D at concentrations ranging from 40 to 43000 mg/kg were detected in 10 soil samples, and TPH-G at concentrations ranging from 84 to 1100 mg/kg were detected in seven soil samples. Analysis of grab groundwater samples collected from Temporary Wells GP-2, GP-3, and GP-6 detected benzene at concentrations of up to 24 ug/l, TPH-G of up to 200 ug/l, and TPH-D of up to 22000 ug/l. Liquid-phase hydrocarbons were observed in Temporary

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Wells GP-1, GP-4, GP-5, GP-7, and GP-8, a sample of which was collected and characterized as being similar to diesel (Groundwater Technology, Inc., 1995c).

Since September 1994, Monitoring Wells MW-1, MW-2, and MW-3 at the Dongary Investments Lease site have been sampled on a quarterly basis. Groundwater gradient at the site has consistently been in a northerly to northwesterly direction during each of the sampling events. Analysis of groundwater samples detected TPH-D at concentrations of up to 10,000 ug/1, TPH-G at up to 110 ug/l in MW-2 and MW-3, and benzene in all the wells at up to 0.9 ug/l (Groundwater Technology, Inc., 1995a, b, and c).

2.0 FIELD METHODS

The field methods used during this investigation for well construction and development, soil and groundwater sampling, and surveying are described in the following section. A permit to install monitoring wells was acquired from Zone 7 and is presented in Appendix B.

2.1 Soil Boring/Temporary Well Installation and Sampling

On May 11 and 12, 1995, 11 exploratory soil borings, SB-7 to SB-17, were drilled to depths of approximately 15 feet. Drilling was performed by Soils Exploration Services, Benicia, California, using a CME 55 drilling rig with direct push capabilities and equipped with 4-inch-diameter casing. Soil samples were collected using a split-spoon sampler and field screened using an organic vapor meter.

Each boring was converted into a temporary well by inserting 1-inch-diameter perforated PVC casing and purging approximately 1 gallon of groundwater using a disposable bailer. Grab groundwater samples were not collected from SB-14 and SB-15 due to the presence of liquid-phase hydrocarbons. The soil and groundwater samples were transported in an iced cooler to a state-certified laboratory following chain of custody procedures. The drilling and soil sampling procedures are presented in Appendix C.

Boring logs were prepared for this investigation using the Unified Soils Classification System, which includes a description of soil characteristics such as color, moisture, consistency, and grain size. The boring logs are presented in Appendix D.

2.2 Monitoring Well Installation and Construction

On August 25, 1995, Monitoring Wells MW-4 through MW-8 were installed in accordance with the field procedures for groundwater monitoring well installation presented in Appendix C. The wells were constructed of 2-inch-diameter, flush-threaded, Schedule 40 PVC casing. The well construction details are included on the boring logs in Appendix D.



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2.3 Monitoring Well Development and Sampling

Well development and sampling was in accordance with the guidelines of the governing regulatory agencies (State Water Resources Control Board, 1989 and United States Environmental Protection Agency, 1986). The field procedures for groundwater monitoring well development and sampling are presented in Appendix E.

Monitoring Wells MW-4 through MW-8 were developed on August 25, 1995, after placing the filter pack and before installing the bentonite pellets and cement seal. The wells were developed by removing at least 10 casing volumes while alternately using a surge block and pump. The well development data are presented in the field survey forms in Appendix F.

On September 6 and 11, 1995, groundwater samples were collected from Monitoring Wells MW-2, MW-4, MW-5, and MW-7. Samples were not collected from MW-1, MW-3, MW-6, or MW-8 due to the presence of liquid-phase hydrocarbons or sheen on the groundwater. The wells to be sampled were purged of at least 3 casing volumes before sample collection, while monitoring pH, specific conductivity, and temperature. The samples were transported in an iced cooler to a state-certified laboratory following chain of custody procedures. The groundwater sampling data are presented in the field survey forms in Appendix G.

Coordinated groundwater monitoring and sampling was performed at the site and the neighboring Dongary Investment property on September 28, 1995 to obtain data necessary to assess the nature and extent of the hydrocarbon plume at the two sites. Results from the monitoring conducted at the Dongary Investments property by Groundwater Technology on September 28, 1995 are included in Table 2 (Groundwater Technology, Inc., 1995d). Due to anomalous results in depth to groundwater measurements on September 28, 1995, Groundwater Technology measured the depth to water in the three Dongary Wells on November 20, 1995. As a result, the groundwater elevation measured on September 28, 1995 for MW-1 and the gradient direction calculated by Groundwater Technology, Inc. for that date are not included in Figure 4.

2.4 Groundwater Level Monitoring and Well Surveying

Monitoring Wells MW-1 through MW-8 were surveyed to the top of the well casing by a licensed land surveyor, PLS Surveys, Alameda, California, in reference to the Port of Oakland benchmark. On September 6, 1995, the depth to groundwater and thickness of liquid-phase hydrocarbons were measured in Wells MW-1 through MW-8 from the top of well casing to the nearest 0.01 foot, using an electronic water level indicator. The well survey data and groundwater elevation measurements are presented in Table 1, with a graphical interpretation of the groundwater gradient beneath the site based on the results of the September 6 and 28, 1995 sampling events shown on Figures 3 and 4. The well elevation survey map for the monitoring wells is presented in Appendix G.

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3.0 SITE GEOLOGY AND HYDROGEOLOGY

The site is in the Coast Range Geomorphic Province, on the eastern side of San Francisco Bay, approximately 7 miles to the west of the Hayward Fault. The uppermost geologic member consists primarily of Quaternary alluvial deposits. The Quaternary alluvium is composed of unconsolidated to semi-consolidated bay mud, silt, sand, and gravel. The elevation of the site is approximately 10 feet above mean sea level. The topography of the vicinity is generally flat, with a gradual slope to the west, toward San Francisco Bay (Page, Ben M., 1966).

Soil types encountered at the site during drilling included sand, clay, and sandy gravel. In MW-4, clayey sand was encountered from surface grade to approximately 7 feet below grade, underlain by silty sand to approximately 12 feet below grade and clay to the total depth of the boring at 20 feet. In MW-5, sand was encountered from surface grade to approximately 7 feet below grade, overlying clayey sand to approximately 17 feet below grade and silty sand to the total depth of the boring at approximately 19.5 feet.

In MW-6, sand was encountered from surface grade to approximately 7 feet below grade, underlain by silty clay to a depth of approximately 12 feet, sand to a depth of approximately 17 feet, and clay to the total depth of the boring at approximately 19.5 feet. Sand was encountered from surface grade to approximately 7 feet below grade in MW-7, underlain by sandy clay to approximately 12 feet below grade, and sand to the total depth of the boring at approximately 19.5 feet.

In MW-8, gravelly clay was encountered from surface grade to a depth of approximately 7 feet, underlain by sandy gravel to approximately 12 feet below grade, gravelly sand to approximately 17 feet below grade, and sand to the total depth of the boring at approximately 19.5 feet. Hydrogeologic cross sections are shown on Figure 5.

The depth to groundwater in the monitoring wells ranged from 6.56 and 9.85 feet below the top of the casings. The groundwater elevations measured on September 6, 1995 were used to prepare the groundwater potentiometric surface map shown on Figure 3, which indicates a gradient of approximately 0.02 foot per foot in a general northerly direction across the site. Groundwater elevations were also measured on September 28, 1995 in coordination with the monitoring of three wells at the Dongary Investments leased site, and were used to develop the groundwater potentiometric surface map shown on Figure 4. The groundwater elevation data from September 28, 1995 indicate a gradient of approximately 0.01 foot per foot in a north/northeasterly direction across the project site. It should be noted that the groundwater gradient direction at the Dongary Investments site measured on September 28, 1995 was interpreted to be southerly, which is not consistent with the interpreted gradient from previous monitoring events (Groundwater Technology, Inc., 1995a, 1995b, and 1995c).

Groundwater\Technology attributed the change in calculated gradient to an anomalous depth to groundwater measurement in MW-1, and, therefore, collected additional depth to groundwater measurements in November 20, 1995. by foc. phone.

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4.0 ANALYTICAL METHODS

Soil and groundwater samples collected during this investigation were analyzed by Clayton Environmental Consultants, a state-certified laboratory, using standard test methods of the U.S. Environmental Protection Agency (EPA) and the California Department of Health Services. The soil samples were analyzed for the following:

- TPH-G and BTEX using EPA Methods 8015/8020
- Total petroleum hydrocarbons as kerosene (TPH-K) using EPA Method 8015 modified
- TPH-D using EPA Method 8015 modified
- TPH-O using EPA Method 8015 modified

The groundwater samples were analyzed for the following:

- TPH-G and BTEX using EPA Methods 8015/8020
- TPH-D using EPA Method 8015 modified
- TPH-O using EPA Method 8015 modified

The laboratory results for the soil and groundwater samples are summarized in Tables 1 and 2. The field procedures for chain of custody documentation and the laboratory reports and chain of custody records are presented in Appendix H. The results of groundwater analysis are shown on Figures 6 and 7.

5.0 LIQUID-PHASE HYDROCARBON MONITORING AND RECOVERY

Liquid-phase hydrocarbons have been observed in Monitoring Wells MW-1 and MW-3, and have been recovered on a weekly basis since June 1994. Product thicknesses and the volume of liquid-phase hydrocarbons removed are presented in Table 5. The interpreted extent of liquid-phase hydrocarbons observed in the monitoring wells at the site and at the neighboring site is presented on Figure 8.

6.0 DISCUSSION OF RESULTS

The following are the results of this site investigation including field observations and laboratory analysis:

 Soil types encountered during drilling consisted of sandy gravel and sand from surface grade to approximately 12 to 14 feet below grade underlain by silty clay, sandy clay, or silty sand to the total depth of the borings at approximately 20 feet.

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- Liquid-phase hydrocarbons were observed in Monitoring Well MW-1 at a thickness of 1.11 foot, MW-3 at 5.80 feet, and in MW-8 at 0.12 foot.
- Liquid-phase hydrocarbons continue to be removed from MW-1 and MW-3 on a weekly basis.
- Groundwater elevation data indicate a gradient of approximately 0.01 to 0.02 foot per foot in a general northerly direction across the site.
- Analysis of the soil samples collected from the 11 soil borings, SB-7 to SB-17, and four additional monitoring wells, MW-4 through MW-8, detected up to 1100 mg/kg TPH-G, 14000 mg/kg TPH-D, and 2600 mg/kg TPH-O. TPH-K was not detected above the reported detection limits in any of the soil samples.
- Toluene, ethylbenzene, and total xylenes were detected at concentrations of up to 0.013, 0.9, and 1.4 mg/kg in the soil samples collected from Borings SB-7, SB-8, SB-10, and SB-17. Benzene was not detected above the reported detection limits in any of the soil samples. Light 2017 pm in MWI.
- Analysis of the grab groundwater samples collected from Temporary Wells SB-7 to SB-17 detected up to 140000 and 43000 ug/l dissolved-phase TPH-G and TPH-D. A grab groundwater sample was not collected from SB-14 due to the presence of liquid-phase hydrocarbons, and an emulsified sample was collected from SB-16, analysis of which detected approximately 64 percent diesel-range hydrocarbons.
 - Analysis of samples collected from the monitoring wells at the Port of Oakland site on September 6 and 28, 1995 detected the following:
 - TPH-G at concentrations of up to 120, 210, and 2600 micrograms per liter (ug/l) in the samples collected from Monitoring Wells MW-2, MW-4, and MW-6. The gas chromatogram patterns did not match the typical gasoline signature.
 - TPH-D at concentrations of up to 8400 and 390 ug/l in the samples collected from MW-6 and MW-7. The gas chromatogram patterns did not match the typical diesel signature.
 - TPH-O at concentrations ranging from 400 to 8000 ug/l in the monitoring wells sampled.
 - Benzene, toluene, ethylbenzene, and total xylenes at concentrations of up to 12, 1.4, 9.4, and 5.6 micrograms per liter (ug/l) in the sample collected from MW-6. Benzene was also detected at concentrations of up to 23 ug/l in the sample collected from MW-4.



- Analysis of samples collected from the monitoring wells at the Dongary Investments site on September 28, 1995 detected the following:
 - TPH-G at concentrations of 250 and 51 ug/l in the samples collected from Monitoring Wells MW-2 and MW-3.
 - TPH-D, benzene, toluene, ethylbenzene, and total xylenes were not detected above the reported detection limit in any of the samples. The groundwater samples were not analyzed for TPH-O.



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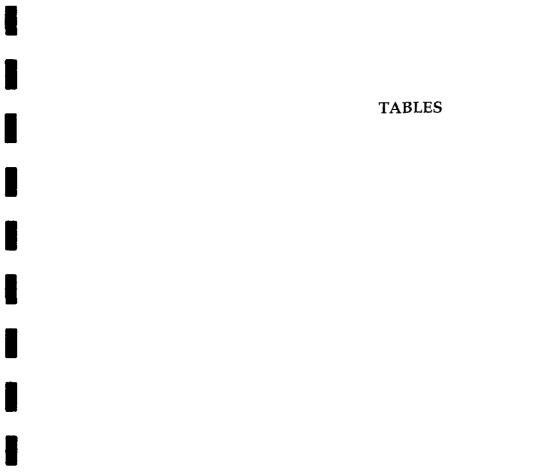


TABLE 1 - SUMMARY OF RESULTS OF MONITORING WELL SAMPLING PORT OF OAKLAND, BUILDING C-401 2277 SEVENTH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO 10-270

NETT NETT	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (feet)	DEPTH TO WATER (feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)		TPH+D (ug/l)	TPH-O (ug/l)	8 (ug/1)	T (ug/l)	(vg/l)	X (ug/l)	LAB
MW-1	03/29/95	14.14	7.67	0.17	6 60			_	-		_		_	_
MW-1	09/06/95	14.14	9.45	0.77	5.27	_			-	_		_		•••
MW-1	09/28/95	14.14	9 85	1.11	5.12	_			-		-	_		-
MW-2	05/27/94	14 36	8 01		6.35	87		470	_	ND<0.5	ND<05	ND<0.5	ND<0.5	D&M
MW-2	03/29/95	14.36	7.47	_	6.89	ND<50		110	1400	ND<04	ND<0.3	ND<0.3	ND<0.4	CEC
QC-1 (c)	03/29/95	-		_	_	ND-50		-	_	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
WM-5	09/06/95	14.36	9.04	_	5.32	ND<50		ND<60	400	ND<0.4	ND<0.3	ND<03	ND<0.4	CEC
QC-1 (c)	09/06/95	-				ND<50		_		ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
MW-2	09/28/95	14,36	9.17	_	5.19	120	(d)	ND<100	1300	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
мw-з	05/25/94	14.22	14.93	6.88	4 45	_			_	_	_	-	_	
MW-3	03/29/95	14.22	9.59	2.93	683	_				_			_	
MW-3	09/06/95	14 22	13,70	5.22	4 44			***	_		***			•••
MW-3	09/28/95	14.22	13 60	5.80	4.97			-	_					_
MW-4	03/29/95	13.15	9.59		3.56						_		_	_
MW-4	09/06/95	13.15	8.48		4.67				***	_	_		_	_
MW-4	09/11/95	13,15	8.51		4.64	150	(d)	ND<200	500	_ <u>23</u> _ 18	ND<0.3	ND<0.3	ND<0.4	CEC
MW-4	09/28/95	13.15	8.54	_	4 61	210	(d) (d)	ND<50	400	18	ND<0.3	ND<0.3	ND<0.4	
MW-5	09/06/95	13.49	6.90		6.59			_	***	_	_	•••	_	_
MW-5	09/11/95	13.49	6.93		6.56	90	(d)	ND<300	2500	33	ND<0.3	ND<03	ND<0.4	CEC
MW-5	09/28/95	13.49	6.56		6.93	ND<50	• •	ND<300	2000	ND<0.4	ND<03	ND<0.3	ND<04	CEC
MW-6	09/06/95	14.00	7.40		6.60			•==	_	_		_		
MW-6	09/28/95	14.00	7.74		6.26	2400	(d)	8400	8000 (e)	12	1.4	9.4	56	CEC
QC-1 (c)	09/28/95	14.00	-		***	2600	(d)	_		12	0.9	7.5	42	CEC
MW-7	09/06/95	14.35	9.10		5.25	ND<50		ND<300	800	ND<04	ND<0.3	ND<0.3	ND<04	CEC
MW-7	09/28/95	14.35	9.74		4.61	ND<50		390 (f)	1200	ND<0 4	ND<03	ND<0.3	ND<04	CEC
MW-8	09/06/95	12.94	7.84		5,10	***		_		-	_			_
MW-8	09/28/95	1294	8.91	0,12	4.12			•	_	_		_	-	
QC-2 (g)	03/29/95	-		_	_	ND<50				ND<0.4	ND<0.3	ND<03	ND<0.4	CEC
QC-2 (g)	09/06/95	_	_	_	***	ND<50				ND<0.4	ND<0.3	ND<0.3	ND<04	CEC
QC-2 (g)	09/28/95				•••	ND<50			***	ND<0.4	ND<0.3	ND<03	ND<04	CEC

ABBREVIATIONS:

TPH-G Total petroleum hydrocarbons as gasoline

Total petroleum hydrocarbons as diesel (C10 to C20) Total petroleum hydrocarbons as oi (C20 to C42) TPH-D

TPH-O

В Benzene

Toluene

Ethylbenzene Ε

Total xylenes

Micrograms per liter ug/l

Not analyzed/applicable ND Not detected above reported detection limit

D&M **D&M Laboratories**

CEC Clayton Environmental Consultants, Inc.

NOTES.

- (a) Top of casing elevations surveyed to the nearest 0.01 foot relative to mean lower low water (3.2 feet below mean sea level), Port of Oakland datum
- (b) Groundwater elevations expressed in feet relative to Port of Oakland datum and corrected assuming a specific gravity of 0.75 for separate-phase product.
- (c) Blind duplicate.
- (d) Purgeable hydrocarbons quantitated as gasoline do not match typical gasoline pattern.
- (e) Unidentified hydrocarbons present in oil range; quantitation based on oil
- (f) Unidentified hydrocarbons present in diesel range; quantitation based on diesel.
- (g) Travel blank.

TABLE 2 - SUMMARY OF RESULTS OF SOIL SAMPLING PORT OF OAKLAND, BUILDING C-401 2277 SEVENTH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-270

SAMPLE ID	SAMPLE DEPTH (feet)	DATE OF SAMPLING		TPH-K (mg/kg)	TPH-D (mg/kg)	TPH-O (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	LAB
SB-1	5.0	05/17/94	ND<0.2		10		ND<0.005	ND<0.005	ND<0.005	ND<0.005	D&M
SB-2	5.0	05/17/94	ND<0.1		43		ND<0.025	ND<0.025	ND<0.025	ND<0,025	D&M
SB-3	5.0	05/17/94	ND<0.2		ND<5		ND<0.005	ND<0.005	ND<0.005	ND<0.005	D&M
SB-4	5.0	05/17/94	ND<0.2		ND<5		ND<0.005	ND<0.005	ND<0.005	ND<0.005	D&M
SB-5	5.0	05/17/94	ND<0.2		ND<5		ND<0.005	ND<0.005	ND<0.005	ND<0.005	D&M
SB-6	5.0	05/17/94	ND<0.2		ND<5		ND<0.005	ND<0.005	ND<0.005	ND<0.005	D&M
SB-7	3.0	05/11/95	ND<0.3		ND<1	12	ND<0.005	0.006	ND<0.005	ND<0.005	CEC
SB-7	9.0	05/11/95	ND<0.3		ND<1	ND<4	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC
SB-8	3.0	05/11/95	ND<0.3		ND<1	260	ND<0.005	ND<0.005	ND<0.005	0.005	CEC
SB-8	9.0	05/11/95	15 (a))	2	13	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC
SB-9	3.0	05/11/95	2.2 (a))	ND<1	520	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC
SB-9	9.0	05/11/95	18 (a))	230	300	ND<0.005	ND<0.005	ND<0.005	ND<0,005	CEC
SB-10	3.0	05/11/95	0.8 (a))	ND<1	340	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC
SB-10	9.0	05/11/95	ND<0.3		ND<1	ND<4	ND<0.005	0.013	ND<0.005	ND<0.005	CEC
\$B-11	9.0	05/11/95	ND<0.3		ND<1	14	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC
SB-12	9.0	05/11/95	4.7 (a))	ND<1	10	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC
SB-13	9.0	05/11/95	ND<0.3		ND<1	5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC
SB-14	6.0	05/11/95	40 (a))	1200	140	ND<0.005	ND<0.005	ND<0.005	ND<0,005	CEC
SB-15	6.0	05/11/95	ND<0.3		ND<1	ND<4	ND<0.005	ND<0.005	ND<0.005	ND<0,005	CEC
SB-16	6.0	05/11/95	130 (a))	170	120	ND<0.1	ND<0.1	ND<0.1	ND<0.1	CEC
SB-17	6.0	05/11/95	1100 (a)		14000	ND<4	ND<0.5	ND<0.5	0.9	1.4	CEC
SB-17	9.0	05/11/95	2,4 (a))	26	27	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC

17-Nov-95 PAGE 1

conc. > 100ppm

TABLE 2 - SUMMARY OF RESULTS OF SOIL SAMPLING PORT OF OAKLAND, BUILDING C-401 2277 SEVENTH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-270

SAMPLE ID	SAMPLE DEPTH (feet)	DATE OF SAMPLING	TPH-G (mg/kg)	TPH-K (mg/kg)	TPH-D (mg/kg)	TPH-O (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	LAB
MW-1	5.0	05/16/94	ND<0.2		ND<5		2.9	9.7	5.4	30	D&M
MW-2	5.0	05/16/94	ND<0.2		ND<5	me w	ND<0.005	ND<0.005	ND<0.005	ND<0.005	D&M
MW-3	5.0	05/16/94	ND<0.2		ND<5		ND<0.005	ND<0.005	ND<0.005	ND<0.005	D&M
MW-4	10.0	08/25/95	ND<0.3	ND<1	ND<1	ND<4	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC
MW-5	6.5	08/25/95	ND<0.3	ND<1	ND<1	ND<4	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC
MW-5	10.0	08/25/95	ND<0.3	ND<1	5	31	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC
MW-6	10.0	08/25/95	ND<0.3	ND<1	ND<1	ND<4	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC
MW-7	10.0	08/25/95	ND<0.3	ND<1	ND<1	ND<4	ND<0.005	ND<0.005	ND<0.005	ND<0.005	CEC
MW-8	6.5	08/25/95	47 (a)	ND<1	1300	1700	ND<0.3	ND<0.1	ND<2	ND<0.2	CEC
MW-8	10.0	08/25/95	27 (a)	ND<1	1800	2600	_ND<0.3	ND<0.1	ND<1	ND<0.3	CEC

ABBREVIATIONS:

TPH-G Total petroleum hydrocarbons as gasoline TPH-K Total petroleum hydrocarbons as kerosene

TPH-D Total petroleum hydrocarbons as diesel (C10 to C20 range)
TPH-O Total petroleum hydrocarbons as oil (C20 to C42 range)

B Benzene
T Toluene
E Ethylbenzene
X Total xylenes

mg/kg Milligrams per kilogram

ND Not detected above reported detection limit

--- Not analyzed
D&M D&M Laboratories

CEC Clayton Environmental Consultants

EVA10-270270-1-68.WO

conc 3100 ppm

17-Nov-95

PAGE 2

NOTES:

Sample appears to be weathered gasoline.

(a)

TABLE 3 - SUMMARY OF RESULTS OF TEMPORARY WELL SAMPLING PORT OF OAKLAND, BUILDING C-401 2277 SEVENTH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-270

SAMPLE ID	DATE OF SAMPLING	TPH-G (ug/l)	TPH-D (ug/l)	8 (ug/l)	T (ug/l)	E (ug/l)	(ug/l)	LAB		
SB-1	05/17/94	ND<50	210000000	4200	1900	ND<0.5	1400	D&M		
SB-2	05/17/94	23000	310000	ND<0.5	11	57	130	D&M		
SB-3	05/17/94	ND<50	810000	ND<0.5	ND<0.5	3.1	9.3	D&M		
SB-4	05/17/94	ND<50	4500	ND<0.5	ND<0.5	ND<0.5	ND<0.5	D&M		
SB-5	05/17/94	ND<50	170000	ND<0.5	ND<0.5	ND<0.5	23	D&M		
SB-6	05/17/94	ND<50	570000	1.2	ND<0.5	ND<0.5	79	D&M		
SB-7	05/11/95	200	ND<50	6.7	0.3	ND<0.3	ND<0.4	CEC		
SB-8	05/11/95	7300 (a) 3400	ND<4	ND<3	ND<3	ND<4	CEC		
SB-9	05/12/95	29000 (a) 18000	(b) ND<4	ND<3	ND<3	ND<4	CEC		
SB-10	05/12/95	1400 (a	7400	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC		
SB-11	05/11/95	970 (a) 1400	0.5	ND<0.3	ND<0.3	ND<0.4	CEC		
SB-12	05/11/95	ND<50	ND<50	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC		
SB-13	05/12/95	130	ND<50	25	1.3	1.2	4.4	CEC		
SB-14 (c)	05/12/95			-		•••				
SB-15 (c)	05/12/95				_					
SB-16	05/12/95		64000000	(d) —		***		CEC		
SB-17	05/12/95	140000 (a) 43000	ND<40	ND<30	30	50	CEC		
QC-1 (e)	05/12/95	ND<50	***	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC		
ABBREVIA	ATIONS:			NOTES	:					
	tal petroleum hy			(a)	Sample appea	rs to be weather	ed gas.			
B Be	tal petroleum hy nzene luene	drocarbons as	alesel (C10 to	C20 range)	(b)	Sample was a gas, diesel, an	mixture of weath d oil.	nered		
X To	nylbenzene tal xylenes crograms per lite	ır			(c)		∉inot sampled di juid-phase hydro			
ND No	t detected at or a	above reported	detection limit							

D&M D&M Laboratories
CEC Clayton Environmental Consultants

- (d) Emulsifed product (64% diesel).
- Travel blank. (e)

EVX10-270270-1-6C.WQ

17-Nov-95

PAGE 1

TABLE 4 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING DONGARY INVESTMENTS 2225 SEVENTH STREET, OAKLAND, CALIFORNIA

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (feet)	DEPTH TO WATER (feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	(r.g/l)
1016	04/45/00	40.70	5.21		8.51	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3
MW-1	01/15/93	13.72 13.72	6.37		7.35	ND<10	10000	0.5	ND<0.3	ND<0.3	ND<0.3
MW-1	09/12/94	13.72	5.76	_	7.96	ND<10	2800	ND<0.3	ND<0.3	ND<0.3	ND<0.3
MW-1	11/30/94	13.72	4.57	-	9.15	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3
MW-1	03/29/95		5.14		8.58		_			-	
MW-1	05/25/95	13.72 13.72	5.14		8.31	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3
MW-1	06/21/95	13.72	5.44		8.28				_		
MW-1	06/23/95				6.82	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3
MW-1	09/28/95	13.72	6.90	(c) —	7.44	NDCSO		-			
MW-1	11/20/95	13.72	6.28		7.44	_					
					7.59	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3
MW-2	01/15/93	13 80	6.21		7.39 7.33	34	ND<50	0.5	ND<0.3	ND<0.3	ND<0.3
MW-2	09/12/94	13.80	6 47	-		ND<10	81	0.9	ND<0.3	ND<0.3	ND<0.3
MW-2	11/30/94	13.80	6.34		7.46		75	0.3	ND<0.3	ND<0.3	ND<0.3
MW-2	03/29/95	13.80	5.51	_	8.29	ND<50		0.5			
MW-2	05/25/95	13.80	5.60		8.20			NO 00	ND<0.3	ND<0.3	ND<0.3
MW-2	06/21/95	13.80	5.72		8.08	ND<50	ND<50	ND<0.3	ND<0.3	MD<0.3	14040.0
MW-2	06/23/95	13 80	5.72		8.08			-			ND<0.3
MW-2	09/28/95	13 80	6.15		7.65	250	ND<50	ND<0.3	ND<0.3	ND<03	
MW-2	11/20/95	13.80	6.42		7.38				_		
MW-3	01/15/93	15.06	6.44		8.62	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3
MW-3	09/12/94	15.06	7.35	***	7.71	ND<50	ND<50	0.3	ND<03	ND<0.3	ND<0.3
MW-3	11/30/94	15.06	7.12		7.94	110	150	ND<0.3	ND<0.3	ND<03	ND<0.3
MW-3	03/29/95	15.06	6.31	495	8.75	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3
MW-3	05/25/95	15.06	6.75		8.31	·		_			
MW-3	06/21/95	15.06	687		8.19	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3
MW-3	06/23/95	15.06	688		8.18					_	
MW-3	09/28/95	15.06	7.28		7.78	51	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3
MW-3	11/20/95	15.06	7.51		7.55			_			

ABBREVIATIONS:

ND

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel (C10 to C20)
В	Benzene
T	Toluene
Ε	Ethylbenzene
X	Total xylenes
ug/I	Micrograms per liter

Not detected above reported detection limit

Not analyzed/applicable

NOTES:

- (a) Top of casing elevations surveyed to the nearest 0.01 foot relative to mean lower low water (3 2 feet below mean sea level), Port of Oakland datum.
- (b) Groundwater elevations expressed in feet relative to Port of Oakland datum.
- (c) Possible gauging error.

Source: Groundwater Technology, Inc., Third Quarter Groundwater Monitoring and Sampling Report, Ringsby Terminals, Port of Oakland Lease, 2225 Seveth Street, Oakland, California. November 29, 1995.

TABLE 5 - LIQUID-PHASE HYDROCARBON REMOVAL STATUS PORT OF OAKLAND, BUILDING C-401 2277 SEVENTH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-270

								· · · · · · · · · · · · · · · · · · ·	
WELL ID	DATE	CASING ELEVATION (a) (feet)	DEPTH TO WATER (feet)	DEPTH TO PRODUCT	PRODUCT THICKNESS	GROUNDWATER ELEVAT!ON (b) (Feet)	PRODUCT REMOVED (Gailons)	PRODUCT REMOVED CUMULATIVE (Gallons))
MW-1	06/30/94	14.17	9.75	9,20	0.55	4.83	1.5	1.5	(c)
14144-1	07/08/94	14.17	9.88	9.12	0.76	4.86	1.5	3.0	(c)
	07/14/94	14.17	9.90	9.12	0.78	4.86	1.5	4.5	(c)
	7/21-22/94	14.17	9.78	9.16	0 62	4 86	1.5	60	(c)
	07/29/94	14.17	10.00	9.13	0.87	4.82	3.0	9.0	(c)
	08/03/94	14.17	10.3	9.19	1.11	4.70	3.0	12.0	(c)
	08/11/94	14.17	10.51	9.24	1.27	4.61	3.0	15.0	(c)
	08/18/94	14.17	10.38	9.25	1.13	4.64	3.0	18.0	(c)
	09/29/94	14.17	10.5	9.30	1.20	4.57	3.0	21.0	(c)
	10/04/94	14.17	9.75	9.30	0.45	4.76	1.5	22.5	(c)
	10/14/94	14.17	10.05	9.25	0.80	4.72	1.5	24.0	(c)
	10/21/94	14.17	10.84	9.49	1.35	4.34		24.0	(0)
	11/02/94	14.17	10 26	9.44	0.82	4,53	2.5	26.5	(c)
	11/10/94	14.17	9.80	8.45	1.35	5.38	3.0	29.5	(c)
	11/18/94	14.17	9.76	8.78	0.98	5, 15	3.0	32.5	(c)
	12/08/94	14.17	9.46	8.69	0.77	5.29	3.0	35.5	(c)
	01/20/95	14.17	8.01	7.73	0.28	6 37	2.0	37.5	(c)
	01/27/95	14.17	7.54	7.52	0.02	6.65	2.0	39.5	(c)
	02/10/95	14.17	8.15	7.92	0.23	6.19	2.0	41.5	(c)
	02/16/95	14.17	8.40	8.18	0.23	5.94	1.0	42.5	(c)
	02/23/95	14.17	8.46	8.21	0.25	5.90	2.0	44.5	(c)
	03/03/95	14.17	8.25	8.15	0.10	6.00	2.0	46.5	(c)
	03/10/95	14.17	7.63	7.53	0.10	6.62	2.0	48.5	(c)
	03/17/95	14,17	8.00	7.80	0.20	6.32	2.0	50.5	(c)
	04/07/95	14.17				14.17	2.0	52.5	
	04/14/95	14,17		_		14.17	3.0	55,5	
	04/19/95	14.17	8.34	7.10	0.24	6.01	0.5	56 0	
	04/26/95	14.17	8.26	7.98	0.28	6.12	1.0	57.0	
	05/03/95	14.17	8.77	8.47	0.30	5.63	0.5	57.5	
	05/12/95	14.17	8.33	7.87	0.46	6.19	2.0	59.5	
	05/16/95	14 17	8.42	8.64	0.22	5.92	1.5	61.0	
	05/23/95	14.17	8.68	8.51	0.17	5.62	1.5	62.5	
	05/31/95	14,17	8.71	8.54	0.17	5.59	1.0	63.5	
	06/07/95	14.17	8.77	8.61	0.16	5.52	2.5	66.0	
	06/14/95	14.17	9.51	7.88	1.63	5.88	5.0	71.0	
	06/23/95	14,17	9.60	8.20	1.40	5.62	4.0	75.0	
	06/28/95	14.17	8.41	7.61	0.80	6.36	15.0	90.0	
	07/07/95	14.17	8.70	8.09	0.61	5.93	8.0	98.0	
	07/10/95	14.17	8.91	8.00	0.91	5.94	12.0	110.0	
	07/19/95	14.17	8.87	8.49	0.38	5.59	10.0	120.0	
	07/28/95	14.17	9.01	8.54	0.47	5.51	10.0	130.0	
	08/04/95	14.17	9.20	8.76	0.44	5.30	8.0	138.0	
	08/11/95	14.17	9.30	9.07	0.23	5.04	6.0	144.0	
	08/14/95	14.17	9.06	8.52	0.54	5.52	4.0	148.0	
	08/17/95	14.17	8.89	8.41	0.48	5.64	8.0	156.0	
	08/23/95	14.17	9.55	8.95	0.60	5.07	5.0	161.0	
	09/07/95	14.17	9,42	8.87	0.55	5.16	11.0	172.0	
	09/15/95	14.17	9.21	8,98	0.23	5.13	12.0	184.0	
	09/20/95	14.17	9.23	8.79	0.44	5.27	5.0	189.0	
	10/06/95	14.17	9.45	9.14	0.31	4,95	8.0	197,0	

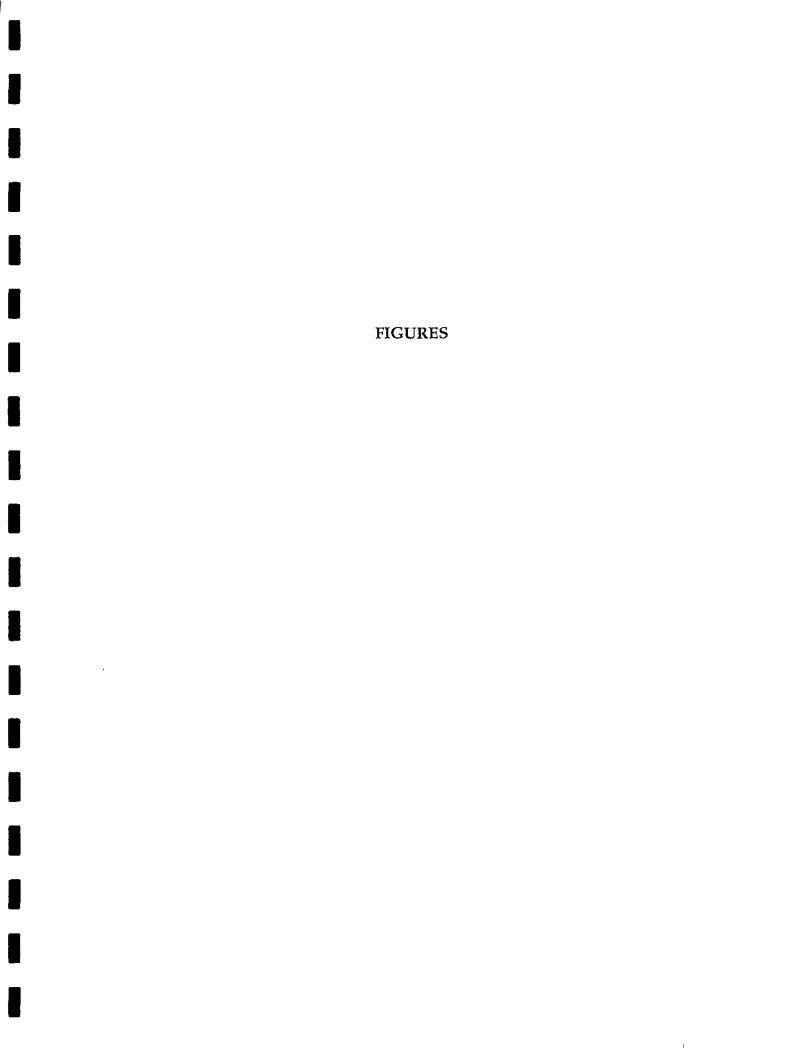
TABLE 5 - LIQUID-PHASE HYDROCARBON REMOVAL STATUS PORT OF OAKLAND, BUILDING C-401 2277 SEVENTH STREET, OAKLAND, CALIFORNIA

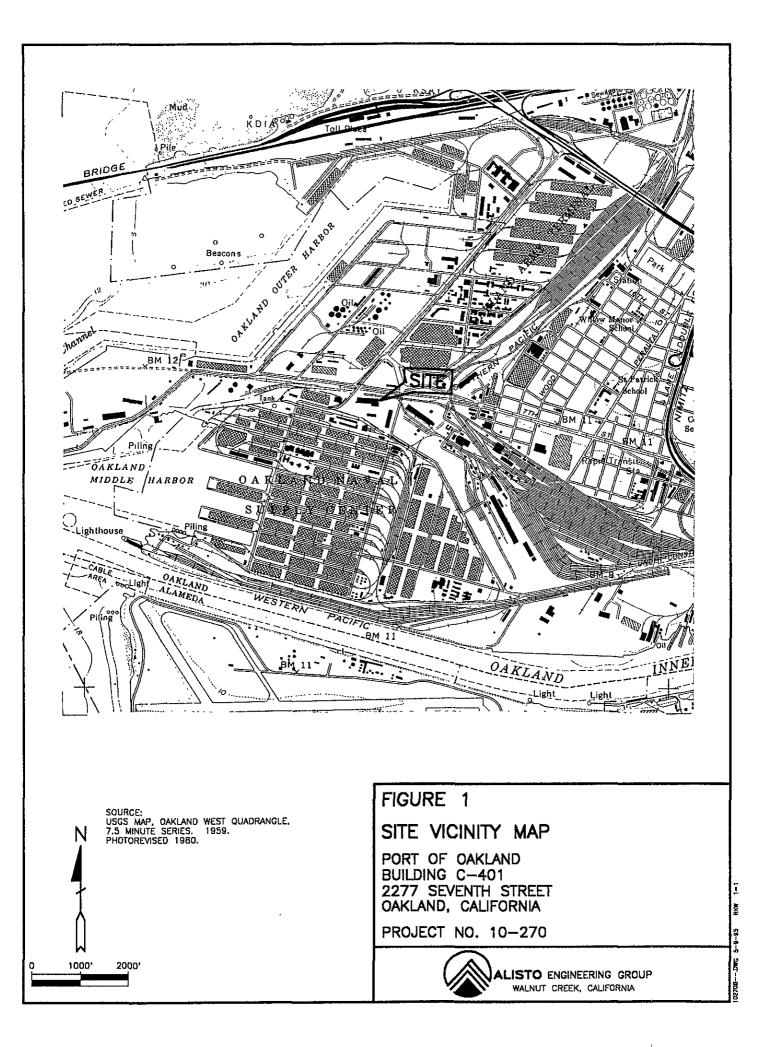
ALISTO PROJECT NO. 10-270

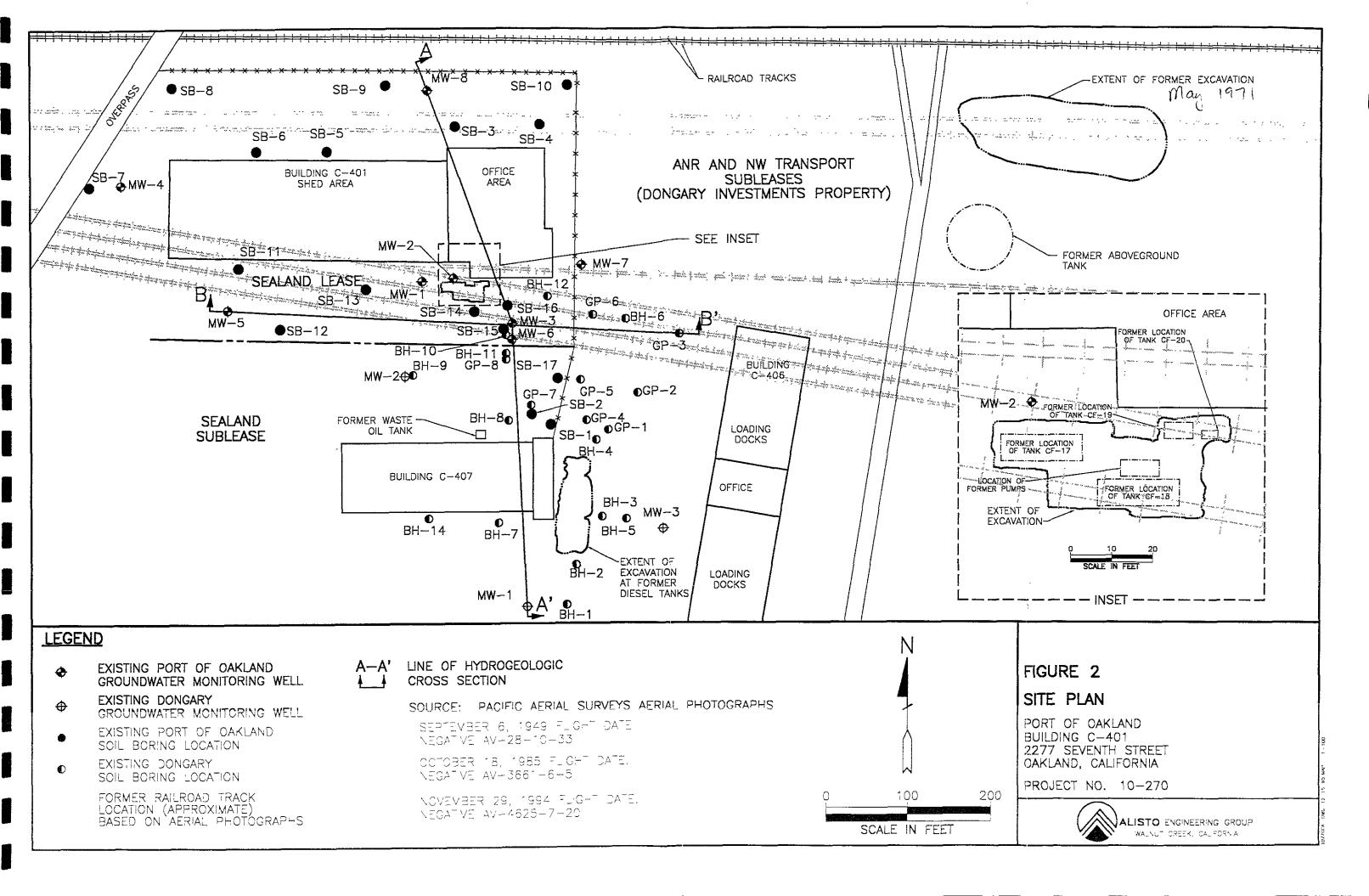
WELL (O	DATE	CASING ELEVATION (a) (feet)	DEPTH TO WATER (feet)	DEPTH TO PRODUCT	PRODUCT THICKNESS	GROUNDWATER ELEVATION (b) (Feet)	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
MW-3	06/30/94	14,24	14,97	8,83	6.14	3.88	45.0	45.0
	07/08/94	14.24	14.85	8.34	6.51	4.27	45.0	90.0
	07/14/94	14.24	14.41	8.35	6.06	4.38	45.0	135.0
	7/21-22/94	14 24	14.32	8.45	5.87	4.32	45.0	180.0
	07/29/94	14.24	14.45	8.90	5.55	3.95	18.0	198.0
	08/03/94	14.24	14.45	8.45	6.00	4,29	30.0	228.0
	08/11/94	14.24	14.45	9.52	4.93	3.49	30.0	258.0
	08/18/94	14.24	14.38	9.48	4.90	3.54	45.0	303.0
	09/23/94	14.24	14.45	8.75	5.70	4.07	100.0	403.0
	09/29/94	14.24	14.45	8.85	5.60	3.99	165.0	568.0
	10/04/94	14.24	14,50	8.65	5.85	4.13	165.0	733.0
	10/14/94	14.24	14,50	9.60	4.90	3.42	165.0	898.0
	10/21/94	14.24	14.50	8.88	5.62	3.96	90.0	988.0
	11/02/94	14.24	14.50	8.79	5.71	4.02	50,0	1038.0
	11/10/94	14.24	13.12	8.07	5.05	4.91	_	1038.0
	11/18/94	14.24	13.10	7.91	5.19	5.03	90.0	1128.0
	12/08/94	14.24	13.58	7.95	5.63	4.88	50.0	1178.0
	01/20/95	14.24	10.11	7.09	3 02	6.40	40.0	1218.0
	01/27/95	14.24	11.09	7.15	3.94	6.11	20.0	1238.0
	02/10/95	14.24	11.05	7.05	4.00	6.19	0.0	1238.0
	02/16/95	14.24	12.10	7 20	4.90	5.82	140.0	1378.0
	02/23/95	14.24	12.00	7.33	4.67	5.74	100.0	1478.0
	03/03/95	14.24	12.25	7.40	4.85	5.63	150.0	1628.0
	03/10/95	14.24	10.40	7.10	3.30	6.32	150.0	1778.0
	03/17/95	14.24	9.80	6.90	2.90	6.62	165.0	1943.0
	03/31/95	14.24		6.60			100.0	2043.0
	04/07/95	14.24		6.80			160.0	2203.0
	04/14/95	14.24		6.90		_	160.0	2363.0
	04/19/95	14.24	11.30	4.26	7.04	8 22	110.0	2473.0
	04/26/95	14.24	11.11	4.83	6,28	7.84	125.0	2598.0
	05/03/95	14.24	10.84	4.89	5.95	7.86	130.0	2728.0
	05/12/95	14.24	11.08	4.86	6.22	7.83	140.0	2868.0
	05/16/95	14 24	11.11	4.72	6.39	7.92	150.0	3018.0
	05/23/95	14.24	11.09	4.63	6.46	8.00	100.0	3118.0
	05/31/95	14 24	10.84	5 20	5.64	7.63	100.0	3218.0
	06/07/95	14.24	12.26	7.33	4.93	5.68	150.0	3368.0
	06/14/95	14.24	12,01	6.21	5.80	6.58	90.0	3458.0
	06/23/95	14,24	12,21	6.12	6.09	6.60	100.0	3558.0
	06/28/95	14,24	11.04	5.76	5.28	7.16	125.0	3683.0
	07/07/95	14.24	10.82	4.61	6.21	8.08	70.0	3753.0
	07/10/95	14.24	10.96	5.25	5,71	7.56	40.0	3793.0
	07/19/95	14.24	10.80	4.80	6.00	7.94	100.0	3893.0
	07/28/95	14.24	10.78	5.68	5.10	7.29	180.0	4073.0
	08/04/95	14.24	12.76	7.88	4.88	5.14	60.0	4133.0
	08/11/95	14.24	12.75	7,52	5.23	5.41	40.0	4173.0
	08/14/95	14.24	13.01	7.99	5.02	5.00	55.0	4228.0
	08/17/95	14.24	14.01	8.02	5.99	4.72	60.0	4288.0
	08/23/95	14.24	13.27	8.42	4.85	4.61	75.0	4363.0
	09/07/95	14.24	12.99	8.33	4.66	4.75	30.0	4393.0
	09/15/95	14,24	10.55	5.66	4.89	7.36	55.0	4448.0
	09/20/95	14.24	12.67	7.45	5.22	5.49	70.0	4518.0
	10/06/95	14.24	13.65	7.77	5.88	5.00	55.0	4573.0

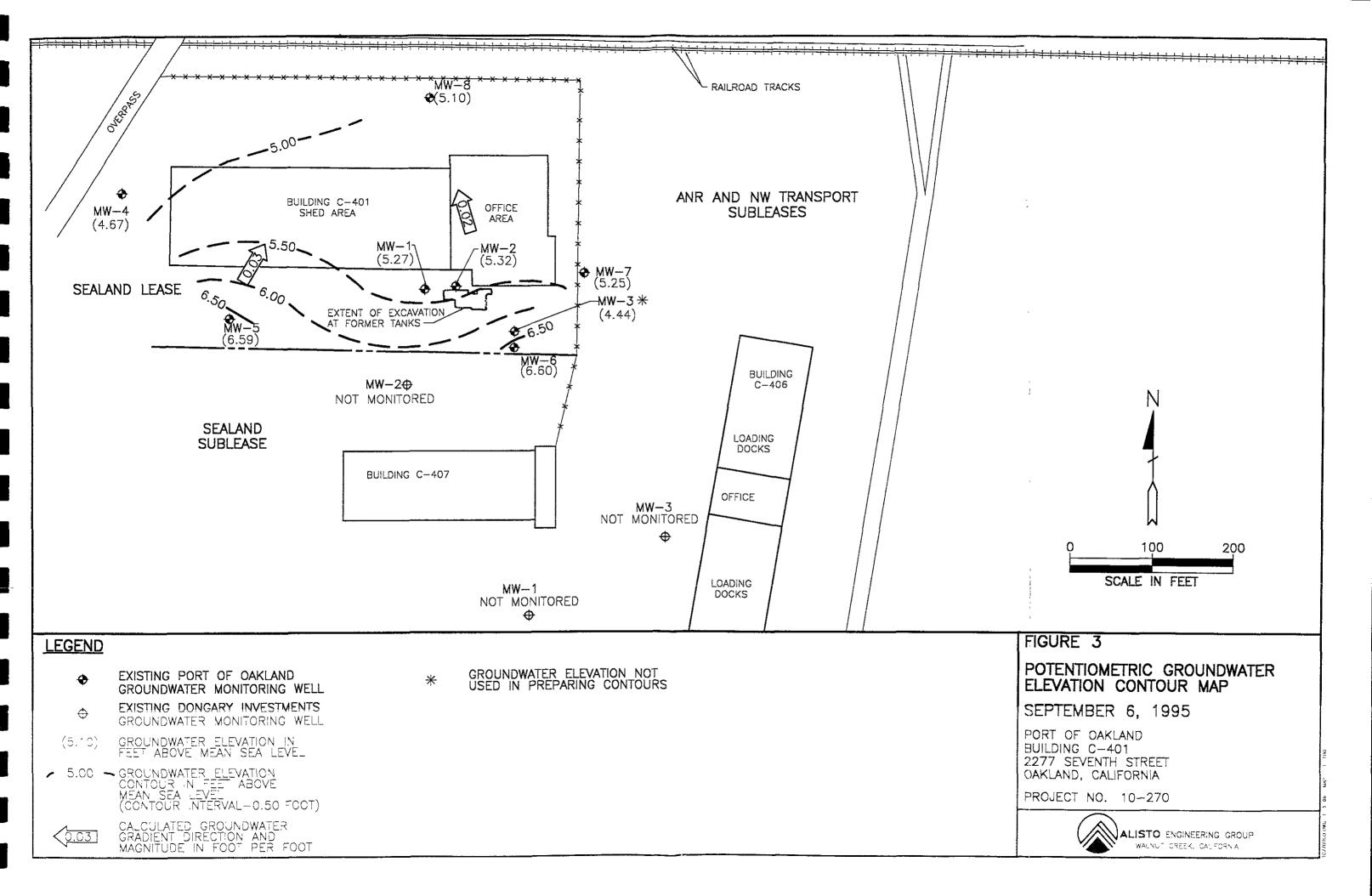
NOTES:

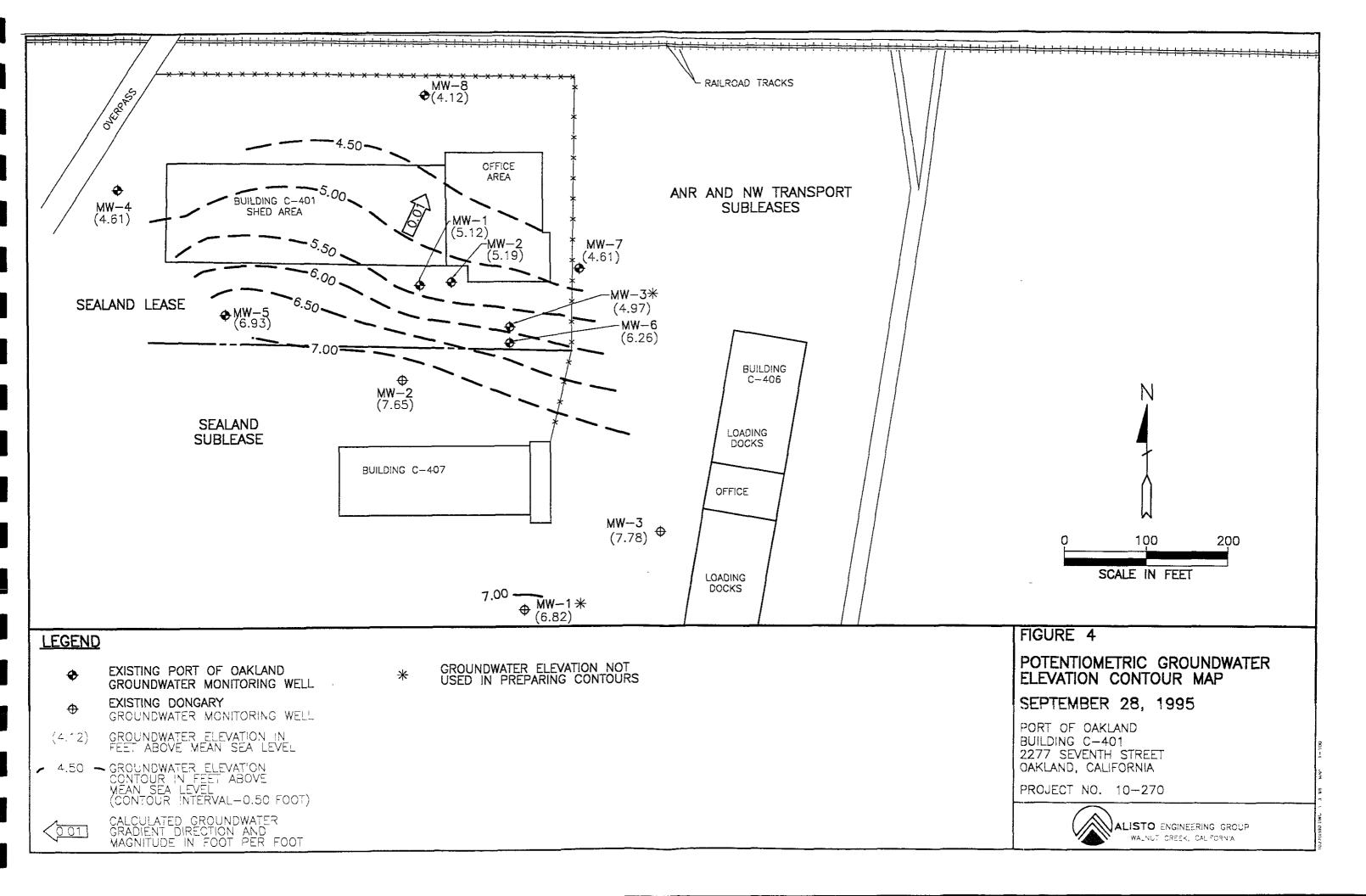
- (a) Casing elevations surveyed to the nearest 0.01 foot relative to mean lower low water (3.2 feet below mean sea level) Port of Oakland datum.
- (b) Groundwater elevations adjusted assuming a specific gravity of 0.75 for the liquid-phase hydrocarbons.
- (c) The estimated amount bailed is approximately 75% product and 25% water.

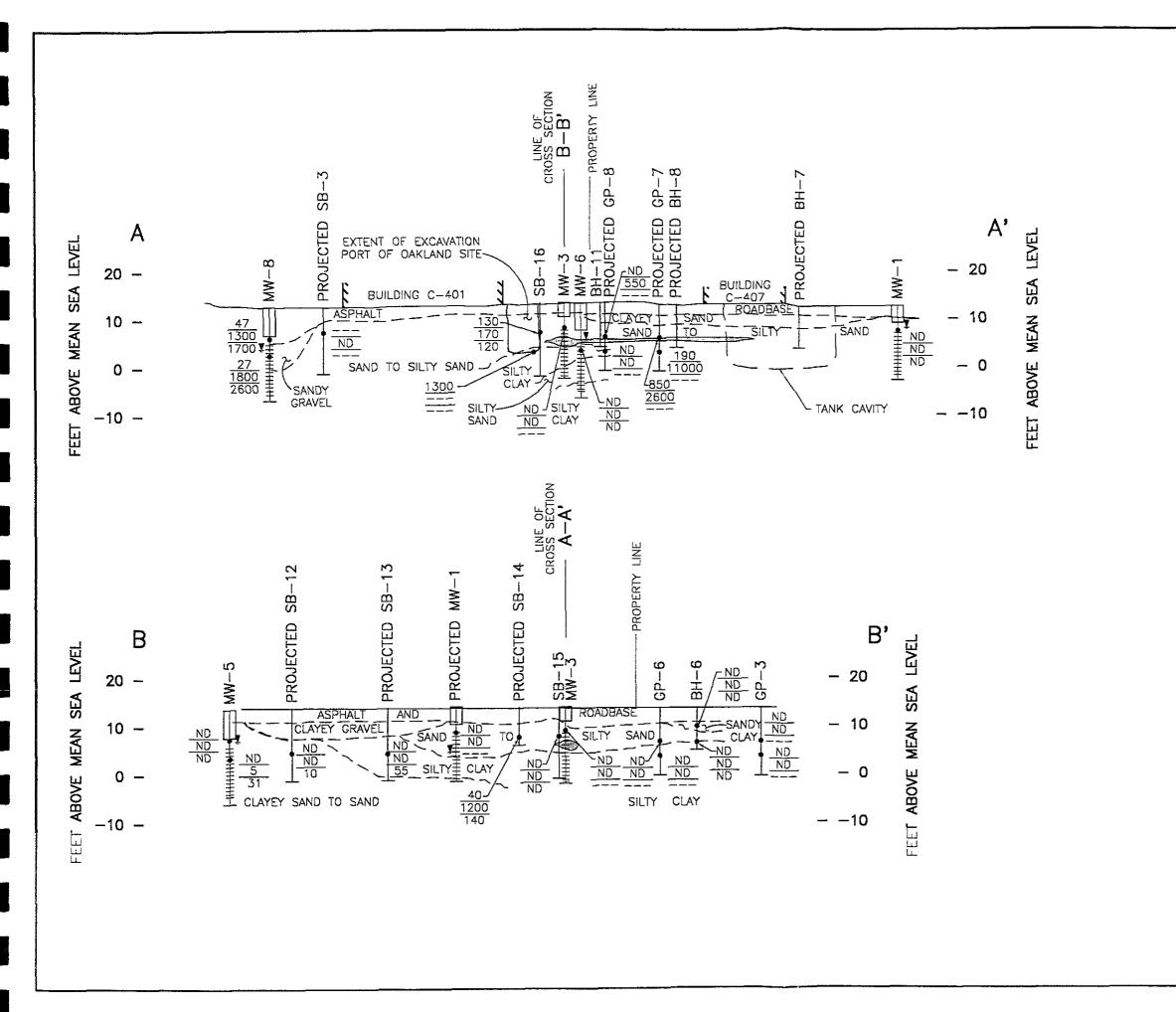


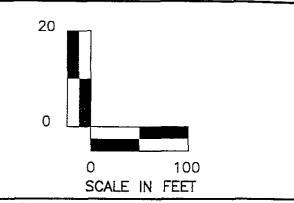












LEGEND

GROUNDWATER MONITORING WELL SHOWING SEAL AND SCREENED INTERVAL

SOIL BORING

--- GEOLOGIC CONTACT (APPROXIMATE)

TPH-G CONCENTRATION OF CONSTITUENTS
TPH-D IN MILLGRAMS PER KILOGRAM

TPH-G TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

TPH-D TOTAL PETROLEUM HYDROCARBONS AS DIESEL

TPH-0 TOTAL PETROLEUM HYDROCARBONS AS OIL

ND NOT DETECTED ABOVE REPORTED DETECTION LIMIT

GROUNDWATER ELEVATION AS MEASURED ON SEPTEMBER 28, 1995

LIQUID—PHASE HYDROCARBON

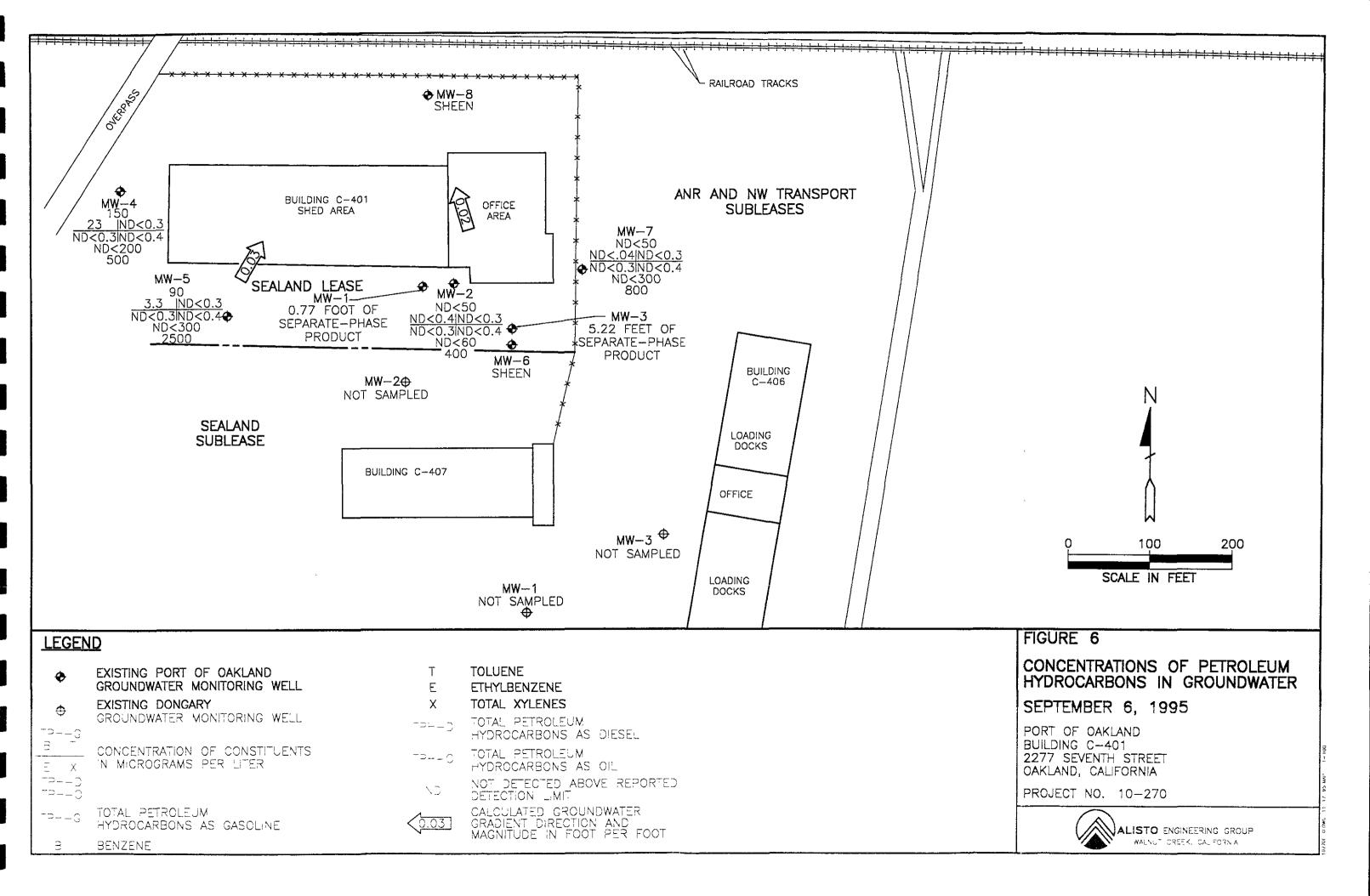
FIGURE 5

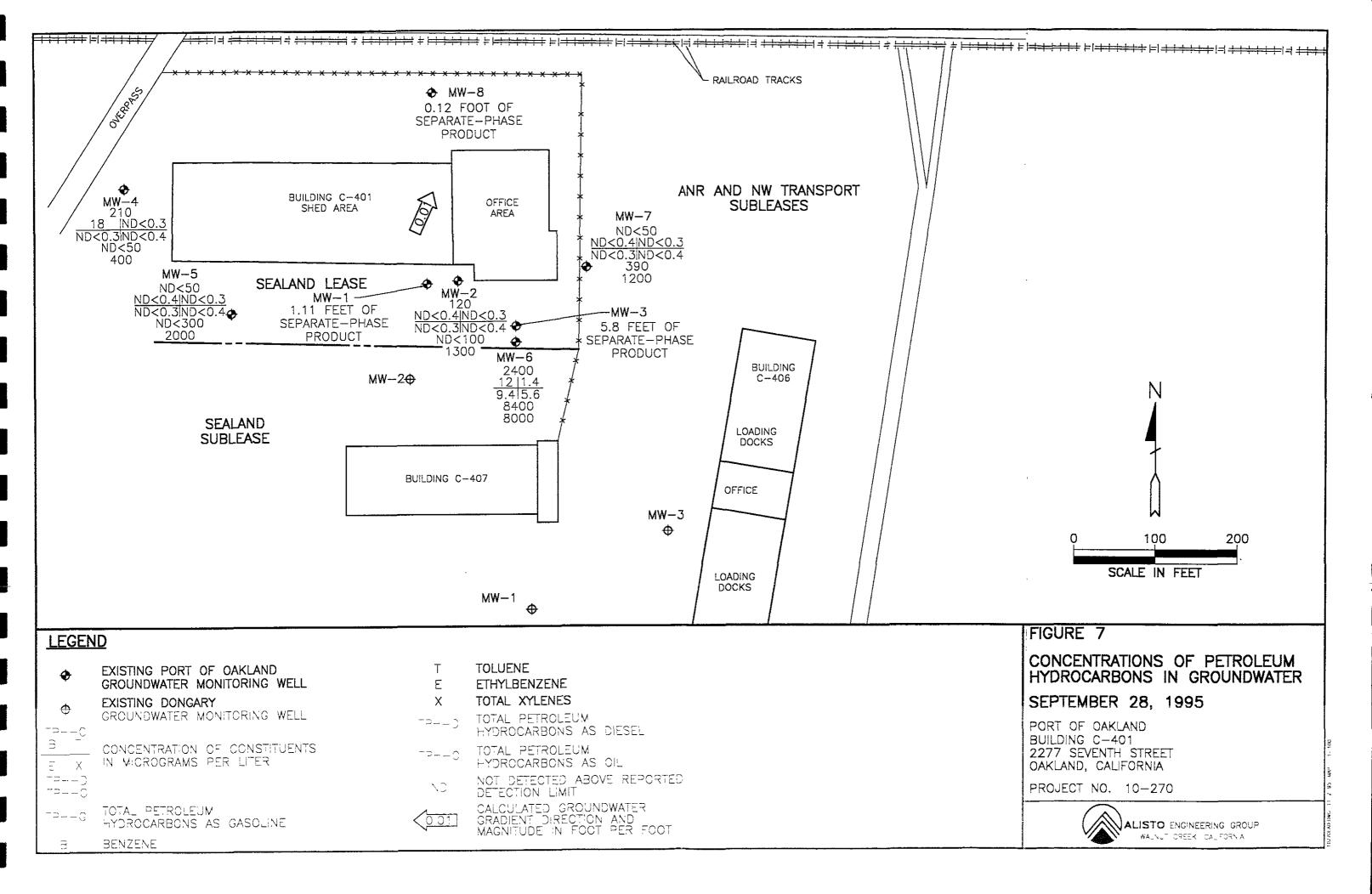
HYDROGEOLOGIC CROSS SECTIONS A-A' AND B-B'

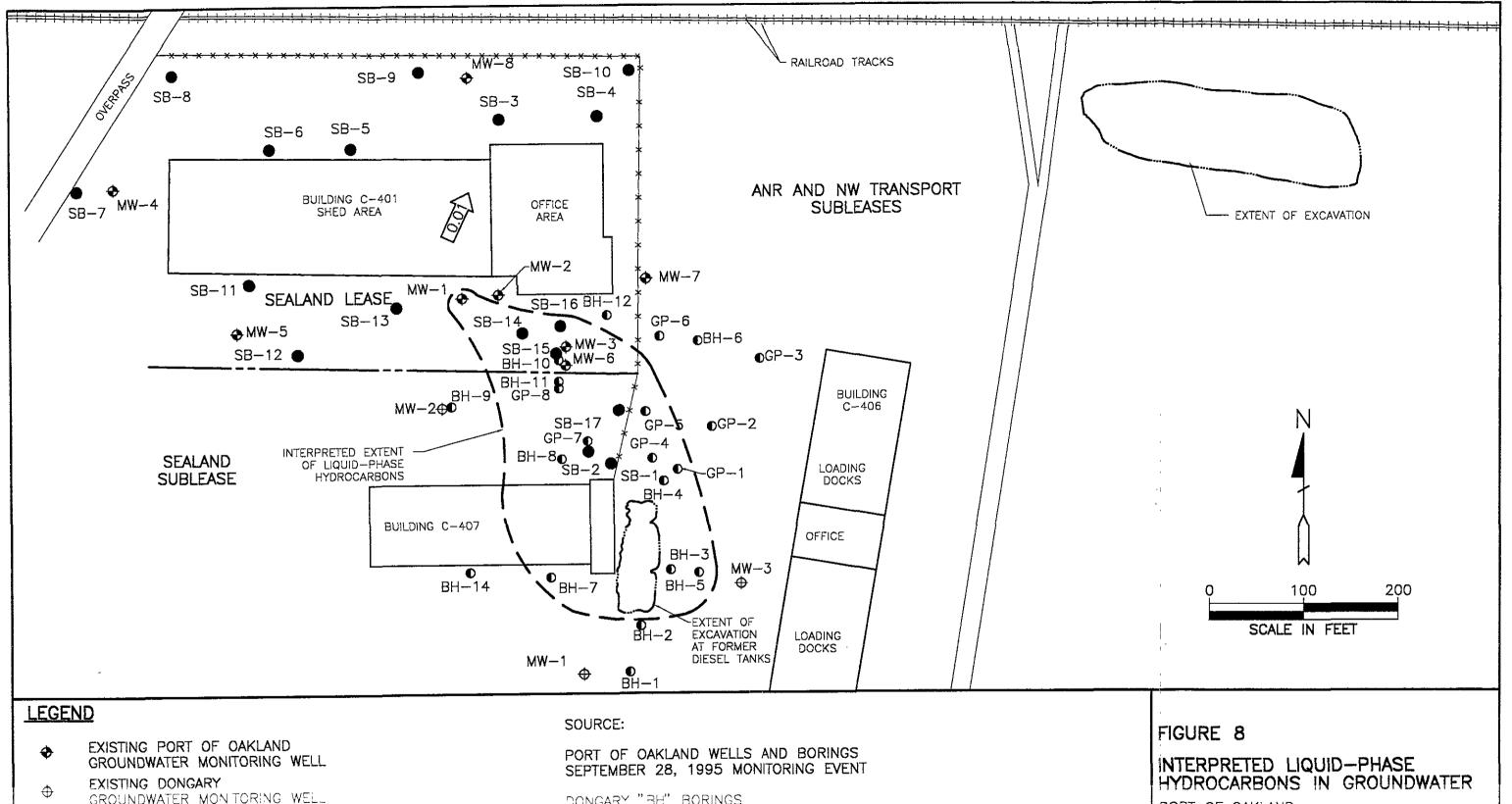
PORT OF OAKLAND BUILDING C-401 2277 SEVENTH STREET OAKLAND, CALIFORNIA

PROJECT NO. 10-270









- EXISTING PORT OF CAKLAND SOIL BORING LOCATION
- EXISTING DONGARY SOIL BORING LOCATION

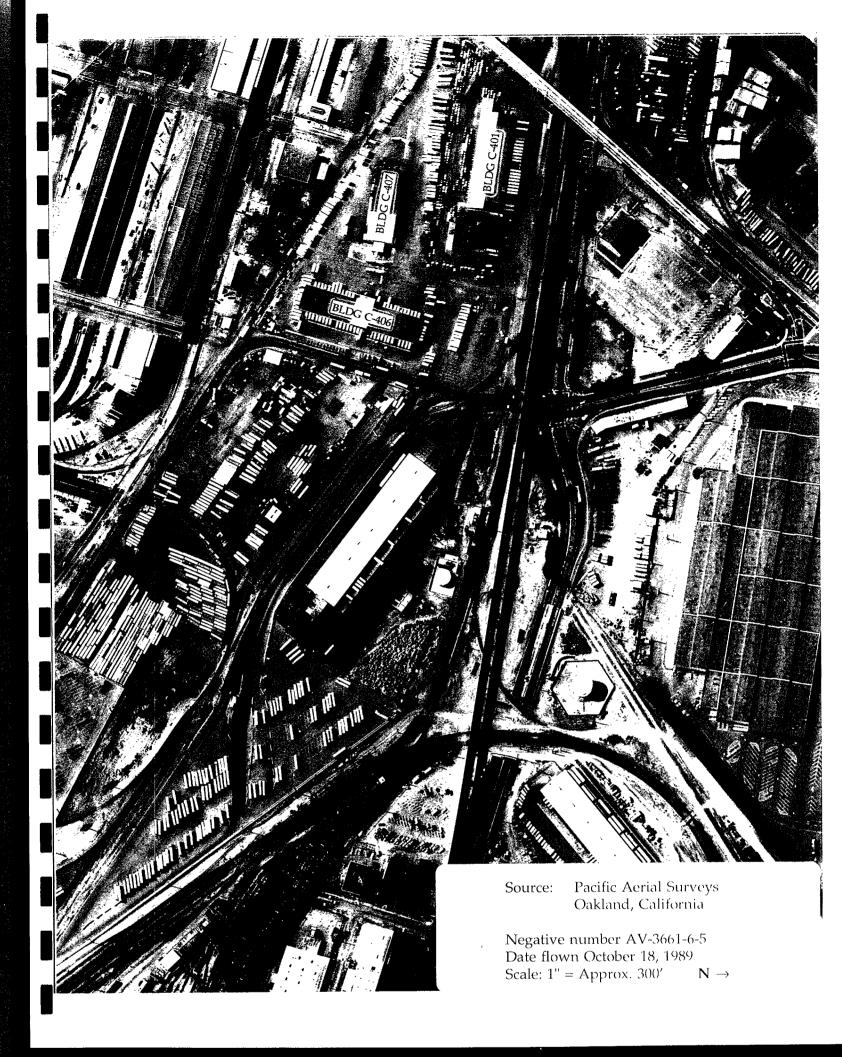
CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT AS MEASURED ON SEPTEMBER 28, 1995 DONGARY "BH" BORINGS DECEMBER 1992 (RAMCON 1993)

DONGARY "GP" BORINGS" MAY 1995 (GROUNDWATER TECHNOLOGY, INC. 1995) PORT OF OAKLAND BUILDING C-401 2277 SEVENTH STREET OAKLAND, CALIFORNIA

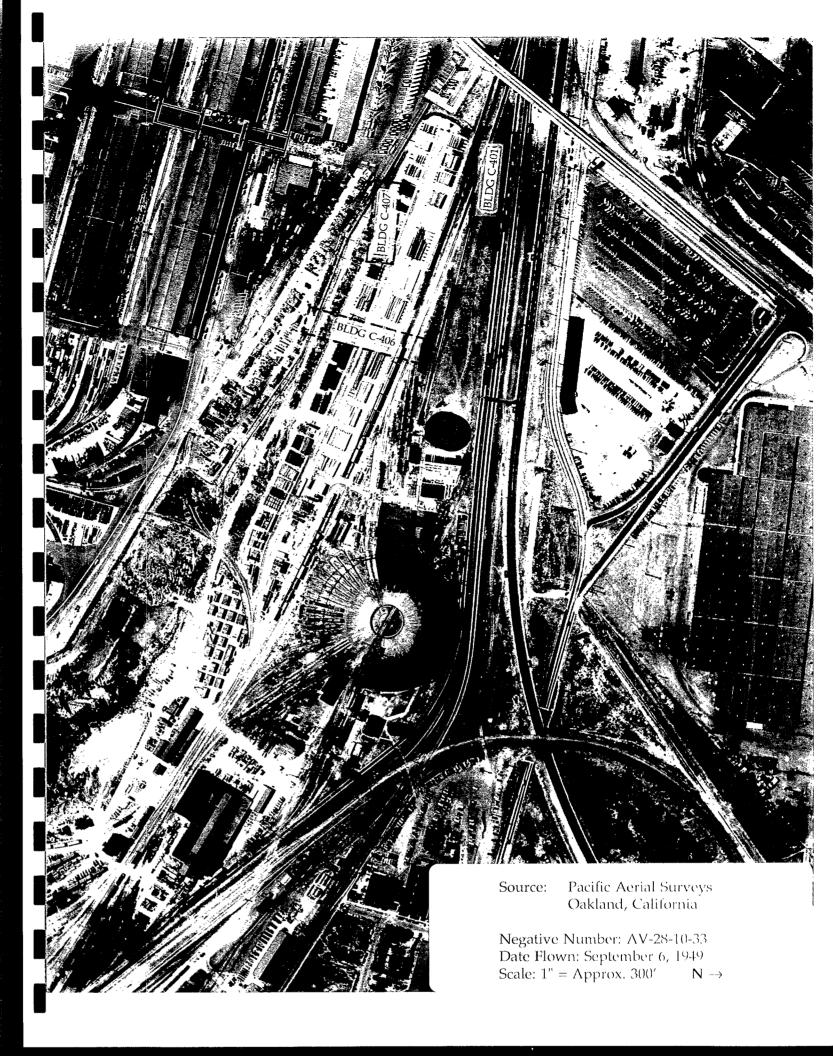
PROJECT NO. 10-270

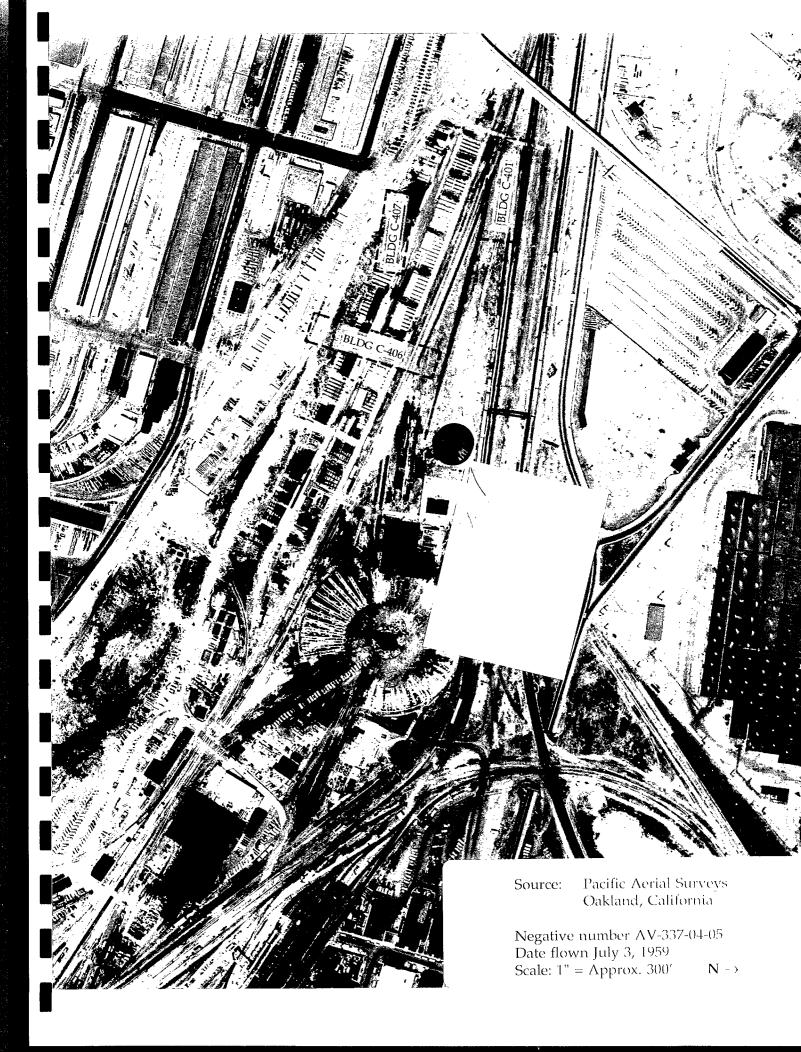


APPENDIX A AERIAL PHOTOGRAPHS









APPENDIX B WELL INSTALLATION PERMIT



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600 FAX (610) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE	FOR OFFICE USE
OCATION OF PROJECT Seq Land Lease	PERMIT NUMBER 95534
2277 Seventh St	LOCATION NUMBER
Dakland CH	
Ame Fort of Oak land	PERMIT CONDITIONS
oddress 530 Water St Voice City Oakland CA Zip 9460"?	Circled Permit Requirements Apply
PPLICANT Name ACLISTO ENGINEEERING CPeinheimer Fax 50 295/823 ddress 1575 Trent #201 Voice 50 295/650 City Walnut Crek CA Zip 94598 YPE OF PROJECT Vell Construction Geotechnical Investigation	A. GENERAL A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
Cathodic Protection General Water Supply Contamination Monitoring Well Destruction	Permit is void if project not begun within 90 days of approval date. B. WATER WELLS, INCLUDING PIEZOMETERS Minimum surface seal thickness is two inches of cement grout.
PROPOSED WATER SUPPLY WELL USE Domestic industrial Other Municipal Irrigation	placed by tremie. 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
DRILLING METHOD: Mud Rotary Auger Cable Other C-57 DRILLER'S LICENSE NO. M. Felell Trelling 672617	C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two fast with compacted material. In areas of known or suspected contamination, tremled cement grout shall be used in place of compacted cuttings. D. CATHODIC. Fill hole above anode zone with concrete placed by
WELL PROJECTS Drill Hole Diameter Casing Diameter Surface Seal Depth 8 tt. Number Number	tremie. E. WELL DESTRUCTION. See attached.
GEOTECHNICAL PROJECTS Number of Borings in. Depth ft.	
ESTIMATED STARTING DATE 8-24-75 ESTIMATED COMPLETION DATE 8-25-95	Approved Wyman Hong Date 24 Aug 95
I hereby agree to comply with all requirements of this permit and Alameda	Wyman Hong

APPLICANT'S SIGNATURE

County Ordinance No 73-68.

Date 8-15-95

APPENDIX C

FIELD PROCEDURES FOR DRILLING, SOIL SAMPLING, AND GROUNDWATER MONITORING WELL INSTALLATION

FIELD PROCEDURES FOR DRILLING, SOIL SAMPLING, AND GROUNDWATER MONITORING WELL INSTALLATION

Drilling Procedures

The soil borings were drilled using 8-inch-diameter, continuous-flight, hollow-stem augers. To avoid cross-contamination, drilling equipment in contact with potentially contaminated material was decontaminated by steam cleaning before and after each use. Decontamination fluids were placed into DOT-approved drums for disposal.

Soil Sampling Procedures

During drilling, samples were collected at approximate 5-foot intervals below grade. Before and after each use, the sampler was washed using a phosphate-free detergent followed by tap water and deionized water rinses. Soil sampling was accomplished using a California-modified split-spoon sampler lined with brass tubes. A 140-pound slide hammer falling 30 inches was used to advance the sampler 18 inches ahead of the hollow-stem augers into undisturbed soil, and blow counts were recorded for every 6 inches of penetration to evaluate the consistency of the soil.

After retrieval from the augers, the sampler was split, the sample tubes removed, and a soil sample was selected for possible chemical analysis. The sample was retained within the brass tube, and both ends were immediately covered with Teflon sheeting and polyurethane caps. The caps were sealed with tape and labeled with the following information: Alisto Engineering project number, boring number, sample depth interval, sampler's initials, and date of collection. The soil sample was immediately placed in a waterproof plastic bag and stored in a cooler containing blue or dry ice. Possession of the soil samples was documented from the field to a state-certified analytical laboratory by using a chain of custody form.

Soil samples and, when representative, drill cuttings were described by Alisto personnel using the Unified Soil Classification System, and field estimates of soil type, color, moisture, density, and consistency were noted on the boring logs. The logs were reviewed by a civil engineer registered in the State of California.

Groundwater Monitoring Well Installation

Construction of the groundwater monitoring wells was based on the stratigraphy encountered in the soil borings. The well construction materials were introduced into the boring through the hollow-stem augers to centralize the well casing and minimize the possibility of native material entering the annular space of the well.

The 2-inch-diameter PVC well casing consisted of 0.010-inch slotted casing from the bottom of the boring to a depth interval above the highest anticipated water level, and solid casing was installed from the top of the slotted casing to approximately 4 inches below grade.

The annular space surrounding the screened portion was backfilled with No. 3 Lonestar sand (filter pack) to approximately 0.5 to 1 foot above the top of the screened section. An approximately 0.5-foot-thick interval of bentonite pellets was added to the annulus above the filter pack and hydrated with approximately 2 gallons of deionized water to minimize intrusion of well seal into the filter pack. A 0.5-foot-thick interval of concrete was placed above the bentonite and a traffic-rated utility box was installed around the top of the well casing. An expanding, watertight well cap and lock were installed on the top of the well casing to secure the well from surface fluid and tampering.

APPENDIX D BORING LOGS AND WELL CONSTRUCTION DETAILS

Bore Hole MW-1

Date 5/16/94

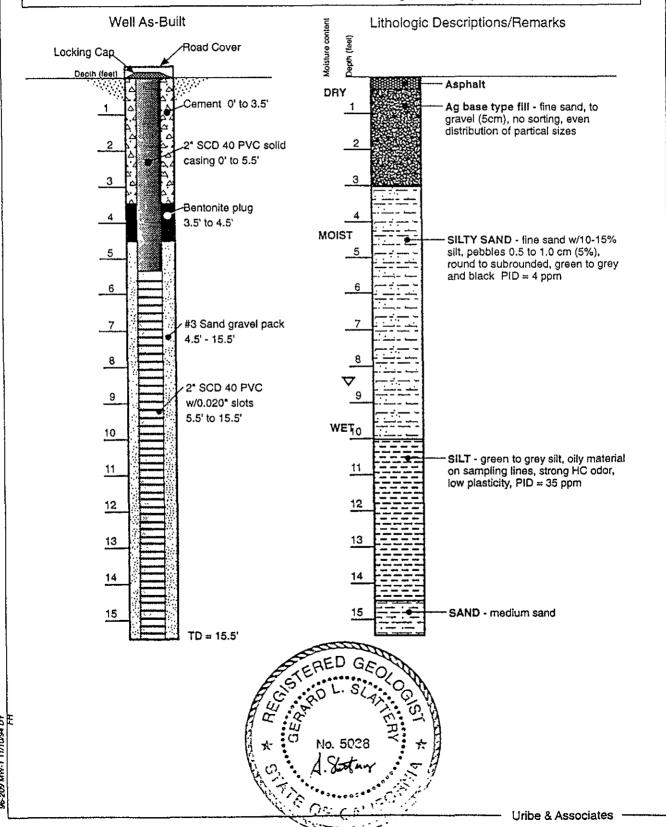
Drilling Method HS Auger

Sampling Method 18" Split spoon

Surface Elevation 14.38

Recorded By JC Borrego

Registered Geologist



Bore Hole MW-2

Date ______5/16/94

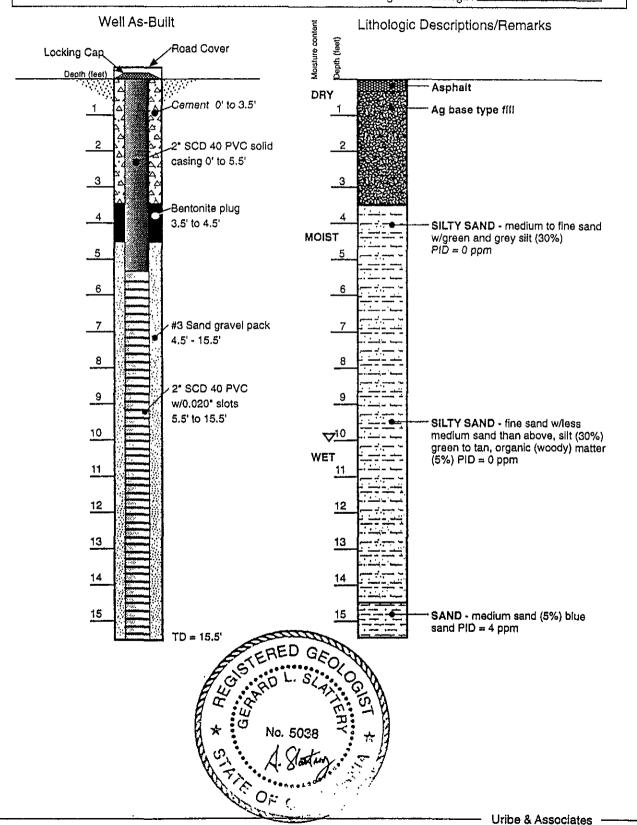
Drilling Method _____HS Auger

Sampling Method _____18" Split spoon

Surface Elevation _____14.38

Recorded By ______JC Borrego

Registered Geologist _______



Bore Hole MW-3

96-209 MW-3 9/27/94 DY FH

Date 5/16/94

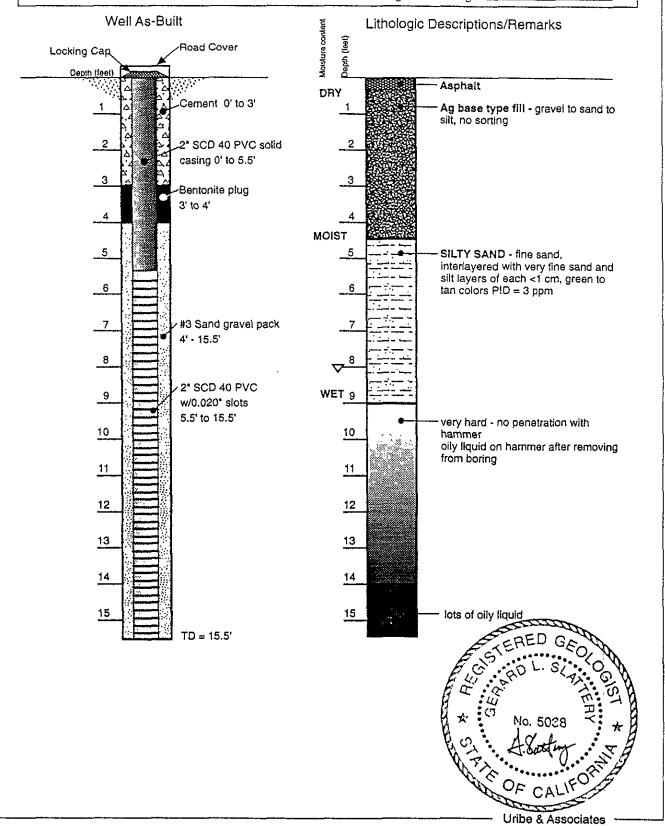
Drilling Method HS Auger

Sampling Method 18" Split spoon

Surface Elevation 14.24

Recorded By JC Borrego

Registered Geologist



Bore Hole SB-1

Date 5/16/94

Drilling Method HS Auger

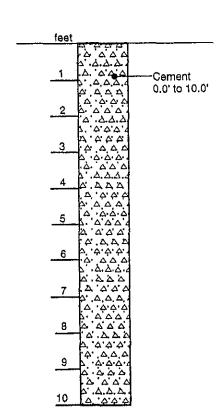
Sampling Method 18" Split spoon

Surface Elevation

Recorded By JC Borrego

Registered Geologist

Boring Abandonment



Lithologic Descriptions/Remarks

DRY

Asphalt

Ag base type fill

SAND - fine to medium sand, green to tan PID = 21 ppm

SAND - medium sand, well sorted, green to blue green TD=10'



Bore Hole SB-2

Date _______5/17/94

Drilling Method _____HS Auger

Sampling Method _____18" Split spoon

Surface Elevation ______

Recorded By ______JC Borrego

Registered Geologist ______

Boring Abandonment

Lithologic Descriptions/Remarks

DRY

Ag base type fill - sandy gravel, no sorting, from silt to gravel up to 5 cm

SAND - medium to fine sand, grey, PID = 142 ppm

SAND - medium to fine sand, black-grey, silt at bottom PID = 28 ppm

TD=10.5'



Bore Hole SB-3

Date 5/17/94

Drilling Method HS Auger

Sampling Method 18" Split spoon

Surface Elevation Recorded By JC Borrego

Registered Geologist

Uribe & Associates

Lithologic Descriptions/Remarks **Boring Abandonment** Asphalt Cement Ag base type fill - angular gravel to 0.0' to 14.0' MOIST SILTY SAND - medium sand w/silt (10-20%), some layers of silt (<1cm thick), tan PID = 5 ppm SILTY SAND - medium to fine sand w/silt (20%), blue to grey color, pebbles angular to 2mm (5%) PID = 7 ppmSILTY SAND - medium to fine sand w/silt (20%), blue to grey color, pebbles 5% up to 0.4cm TD=14'

Bore Hole SB-4

Date _______5/17/94

Drilling Method ______HS Auger

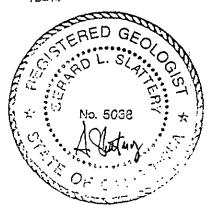
Sampling Method ______18" Split spoon

Surface Elevation _______Recorded By _______JC Borrego

Registered Geologist _______

Boring Abandonment

Lithologic Descriptions/Remarks DRY Ag base type fill - angular gravel to silt, angular, no sorting, even distribution of grains SAND 3 MOIST SILTY SAND - fine sand w/10% sitt, brown PID = 1 ppm 10 SILTY SAND -fine to medium sand w/10% silt, 10% pebbles to 1 cm, brown to tan PID = 2 ppm SILTY SAND -fine to medium sand w/10% silt TD=14'



Bore Hole SB-5

Date 5/17/94

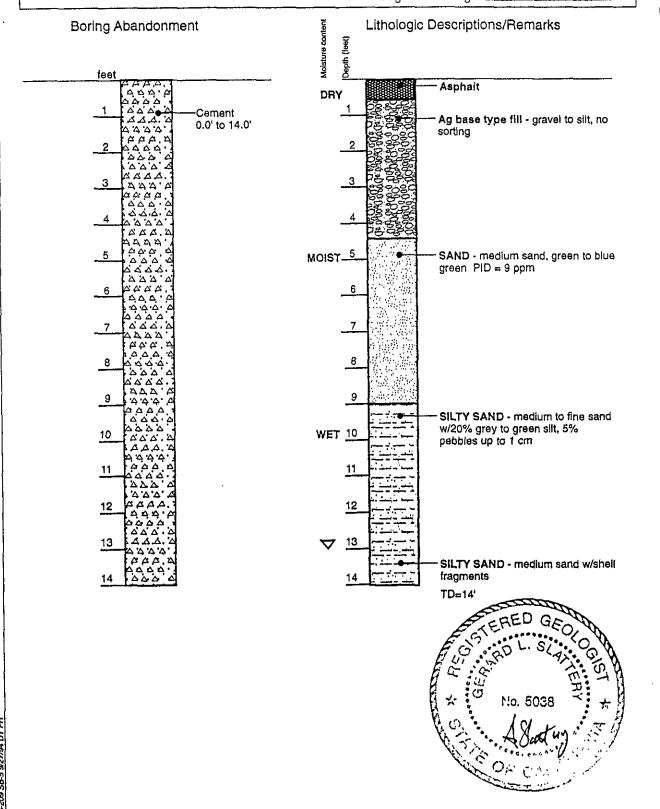
Drilling Method HS Auger

Sampling Method 18" Split spoon

Surface Elevation Recorded By JC Borrego

Registered Geologist

Uribe & Associates



Bore Hole SB-6

Date _______5/17/94

Drilling Method _____HS Auger

Sampling Method ______18" Split spoon

Surface Elevation _______

Recorded By _______JC Borrego

Registered Geologist _______

Boring Abandonment

feet Cement 0.0' to 14.0' 10

Lithologic Descriptions/Remarks Asphalt Ag base type fill - angular gravel to silt, no sorting MOIST_5 SANDY SILT - brown silt w/5% fine sand PID = 24 ppm SILTY SAND - medium to fine sand w/20% grey to green silt, 5% 10 pebbles up to 1 cm PID = 3 ppm WET 11 12 13 SAND - medium to fine sand w/shell fragments green to blue-green color 14



Uribe & Associates

						· · · · · · · · · · · · · · · · · · ·	
			(GE	OLO	GIC	LEGEND
			NES		GW	Well—g no fin	raded gravels, gravel—sand mixtures, little or es
		RAVELS	LITLE OR NO FINES	•	GP	Poorly	-graded gravels, gravel-sand mixtures
SOILS	of	ore than 1/2 coarse fraction No. 4 Sieve	APPRECIABLE NO FINES		GМ	Silty g	ravels, gravel—sand—silt mixtures
			APPR		GC	Clayey	gravels, gravel—sand—clay mixtures
RAINE			1220	。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。	SW	Well-g	raded sands, gravelly sands, little or no fines
COARSE-GRAINED	. ς Δ	INDS	E OS	_	SP	Poorly-	-graded sands, gravelly sands, little or no fines
COAF	m of	ore than 1/2 coarse fraction No. 4 Sieve	APPRECIABLE NO FINES		SM	Silty s	ands, sand—silt mixtures
			APPR		sc	Clayey	sands, sand—clay mixtures
SI					ML	Inorgai clayey	nic silts and very fine sands, rock flour, silty or fine sands or clayey silts with slight plasticity
los c	:	SILTS AND CLAY Liquid limit < !			CL	lnorgar clays,	nic clays of low to medium plasticity, gravelly sandy clays, silty clays, lean clays
SAINE					OL	Organi	c silts and organic silty clays of low plasticity
FINE-GRAINED SOILS		SILTS AND CLAY			МН		nic silts, micaceous or diatomoceous fine sandy soils, elastic silts
		Liquid limit > {			СН	Inorgar	nic clays of high plasticity, fat clays
					ОН	Organio silts	c clays of medium to high plasticity, organic
Н	liGH	ILY ORGANIC SOIL	s ,	, e g ,	Pt	Peat a	nd other highly organic soils
SYMBO		LEGEND:					
	2	Cement					
13.3] s	Sand					
	a	Bentonite				i	LEGEND TO BORING LOGS
		riven Interval of ioil Sample					PORT OF OAKLAND BUILDING C-401 2277 SEVENTH STREET
	S	Sample preserved for Inalysis	possib	le			OAKLAND, CALIFORNIA
X	N	lo sample recovered					PROJECT NO. 10-270
Å		Stabilized water level Froundwater level enc	ountere	ed d	urina (drillina	ALISTO ENGINEERING GROUP WALNUT CREEK, CALIFORNIA
L					3		

		DENGINEERING GROUP UT GREEK, CALIFORNIA			LOG OF BORING SB-7 Page 1 of								
ļ ———			ALIST	ОΡ	05/11/95								
			CLIEN	CLIENT: Port of Oakland									
<u> </u>			LOCATION: 2277 Seventh Street, Oakland, California										
	SEE	SITE PLAN	DRILLING METHOD: Cuttingless										
							Y: Soils Exploration Srv. CASING ELEVATION	ON: <i>N/A</i>					
							s Reinheimer APPROVED BY: 7	Al Sevilla					
BLOWS/8 IN	PID VALUES	WELL DIAGRAM	DEPTH feet		SRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION						
	+			╫	٦		Asphaltic concrete/roadbase.						
			-		0 0	? SW	gravelly SAND; coarse-grained sand.						
N/A	٥		- 5			CL	sandy CLAY: moderate yellow/brown, damp, med medium- to coarse-grained sand.	lium stiff;					
N/A	0	MINIMINI N	-			SC	clayey SAND: medium brown, damp, loose; mediu coarse-grained sand.	m— to					
N/A	0		10-			SP	SAND: medium tan, wet, loose; medium— to coars sand; shell fragments to 2%.	e−grained					
N/A	NM		- - 15-			SC.	clayey SAND: gray/black, wet; organics to IO%; rare sand to 2%.	shells ta 2%;					
			-				Boring terminated at 15 feet.						
			20-										
			25-	-									
			30-										

		O ENGINEERING GROUP NUT CREEK, CALIFORNIA			L(ЭG	OF BORING SB-8 Page 1 of 1
			ALIST	TO P	ROJE	СТ	NO: 10-270-01 DATE DRILLED: 05/11/95
			CLIEN	٧T:	Por	t of	Oakland
	~==	2777 21 444	LOCA	TIO	N: 2	277	Seventh Street, Oakland, California
]	SEE	SITE PLAN	DRILL	ING	MET	HO	Cuttingless
		:					Y: Sails Exploration Srv. CASING ELEVATION; N/A
			<u> </u>				is Reinheimer APPROVED BY: Al Sevilla
BLOWS/8 IN.	PID VALUES	WELL DIAGRAN	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
				1			Asphaltic concrete/roadbase.
				1		_	GRAVEL with sand-clay mixtures.
N/A	0		5-			GC	clayey GRAVEL: dark brown, damp, hard; coarse-grained sand to 5%.
N/A	0	WWWWWWW	-			CL	silty CLAY: mottled tan and dark brown, damp, soft; root traces to 2%; gravel to 1 cm approximately 2%.
N/A	0.2		10-		0 0 0 0 0		gravelly SAND: dark gray/black, moist to wet; organic fragments (wood) to 10%; oily residue on gravel.
N/A	NM		15-		• •		GRAVEL-sand matrix: dark gray/black, wet; coarse-grained sand; olly globs. Sheen on samples.
			25-			91	sand; olly globs. Sheen on samples. Boring terminated at 15 feet.

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		ENGINEERING GROUP JT CREEK, CALIFORNIA			LC	G	OF BORING SB-9	Page 1 of 1					
			ALIST	ОР	05/11/95								
			CLIEN	T:	Port	of (Dakland						
	٥٥٥	SITE PLAN	LOCAT	LOCATION: 2277 Seventh Street, Oakland, California									
	266	SITE PLAIN	DRILL	DRILLING METHOD: Cuttingless									
1			DRILL	ING	COM	PAN'	Y: Solls Exploration Srv. CASING ELEVATION	N: <i>N/A</i>					
			LOGGE	D 8	3Y:	Chris	s Reinhelmer APPROVED BY: A	Al Sevilla					
BLOWS/8 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SANPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION						
							Asphaltic concrete/roadbase.						
					0.0	11	sandy GRAVEL; medlum tan, dry.						
N/A	0		5-			GC	clayey GRAVEL: dark gray/brown, damp to mois wood fragments present.	t, dense;					
N/A	0.2	WWWWWWW				CL	silty CLAY; mottled dark brown and green/tan, organics to 2%.	damp;					
N/A	0.2	NIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	10-				Same: molst.						
N/A	NM		- 15-		<i></i>	SP	SAND: gray, wet to saturated; fine- to medium- shells to 2%.	·grained sand;					
			25-	The state of the s			Boring terminated at 15 feet.						

l

	TO ENGINEERING GROUP NUT CREEK, CALIFORNIA		LO	G (OF BORING S	B-11	Page 1 of 1
SEE	SITE PLAN	CLIENT: LOCATIO DRILLING	Port on Port of Port o	of Oa 77 St OD: ANY:	: 10-270-01 kland eventh Street, Oakland, C Cuttingless Solls Exploration Srv. Reinheimer	DATE DRILLED: alifornia CASING ELEVATIO APPROVED BY: A	DN: <i>N/A</i>
BLOMS/8 IN. PID VALUES	WELL DIAGRAM	DEPTH feet SAMPLES	T 42 T	SOIL CLASS	GEOLOG	SIC DESCRIPTION	
N/A 0 N/A 0 N/A N/A	William West Cement	5 - 10 - 25 - 30 - 30 - 30 - 30 - 30 - 30 - 30 - 3		0S SP	Asphaltic concrete/roadb SAND: medium gray, damp sand. Same: moist; shell fragmer Same: wet; no shell fragm Same: sheen and globules Boring terminated at 15 fe	, laase; fine— ta medium nts <2%. ents.	

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		O ENGINEERING GROUP NUT CREEK, CALIFORNIA			LC)G	OF BORING S	B-10	Page 1 of 1				
			ALIS	TO F	ROJE	ECT	NO: 10-270-01	DATE DRILLED:	05/11/95				
			CLIE	NT:	Por	t of	Oakland						
	CEE	SITE PLAN	LOCATION: 2277 Seventh Street, Oakland, California										
	SEE	SITE FLAN	ORILL	ING	MET	HOL): Cuttingless						
			DRILL	ING	COM	(PAN	IY: Soils Exploration Srv.	CASING ELEVATIO	DN: <i>N/A</i>				
			LOGG	ED (3Y:	Chr	is Reinheimer	APPROVED BY: A	l Sevilla				
BLOWS/8 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOG	GIC DESCRIPTION					
		1		-			Asphaitic concrete/roadb	ase.					
N/A	0		5-			SP	SAND: medium gray, damp sand.		·				
N/A	0	WWW. Cement				CL	silty CLAY: mottled light b moist; organics to 5%; gra	rown and gray/black, ovel to I cm <5%.	damp to				
N/A	0	Ne Ne	- 10- - -			CL	CLAY: mattled green/gray	and black, moist, soft;	; organies to				
N/A	3.1		15-		22	sc	gravelly-clayey SAND: mo gravel to 1.5 cm approxima		ray, moist;				
			25-				Boring terminated at 15 fe						

		O ENGINEERING GROUP OUT CREEK, CALIFORNIA			LO	G	OF BORING SB-12	Page 1 of 1
	SEE	SITE PLAN	CLIEN LOCA1 ORILL	T: IOI ING	Port N: 22 METI	<i>of</i> <i>277</i> HOD PAN	NO: 10-270-01 DATE DRILLED: 05/ Oakland Seventh Street, Oakland, California : Cuttingless Y: Soils Exploration Srv. CASING ELEVATION: S Reinhelmer APPROVED BY: ALS	
BLOWS/8 IN	PID VALUES	WELL DIAGRAN	DEPTH feet		_O	SOIL CLASS	GEOLOGIC DESCRIPTION	
N/A	0		- - - 5-			G₩ GC	Asphaltic concrete/roadbase. GRAVEL with sand matrix: medium fan gravel; glass, brick fragments present. GRAVEL with clay-sand matrix: dark brown, damp, ic organics, brick, and wood fragments to 20%.	
N/A N/A	0	WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	- - - 10-			SP	SAND: medium gray, damp to moist; fine— to medium- rare shell fragments <1%. Same: wet.	-grained;
N/A	NM		- - - 15-		//	sc	clayey SAND: gray/black, wet to saturated; medium sand; black clay blebs to 20%. Boring terminated at 15 feet.	n-grained
			20-					
			25-					:
			30- - -					

				LO	G	OF BORING SB-13	Page 1 of 1				
SEE	SITE PLAN	ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 05/11/95 CLIENT: Port of Oakland LOCATION: 2277 Seventh Street, Oakland, California									
		DRILL	DRILLING COMPANY: Soils Exploration Srv. CASING ELEVATION: N/								
PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION					
0		بر - -			GC	Asphaltic concrete/roadbase. GRAVEL with clay-sand matrix: gray black; brick tragments present.	c and wood				
0	THINININI	-			CL	sandy CLAY: mottled green/gray and gray/blac organics to 5%; root traces present.	rk, damp;				
0.5	Jan ————————————————————————————————————	- 10 - - -				Same.					
NM		- 15- -		<u></u>	SP	SAND: black, wet; medium-grained sand; silt-clamixtures to <5%; shell fragments to 1%. Boring terminted at 15 feet.	y sand				
		20-									
		25- - -									
		30-									
	S S O O O O.5.		SEE SITE PLAN ALIST CLIEN LOCAT DRILL LOGGE NELL DIAGRAM O O O O O O O O O O O O O	SEE SITE PLAN ALISTO PRICLING DRILLING DRILLING DRILLING LOGGED B WELL DIAGRAM O O.5 NM NM NM NM NM NM NM NM NM N	SEE SITE PLAN ALISTO PROJE CLIENT: Port LOCATION: 2: DRILLING COM LOGGED BY: WELL DIAGRAM O O.5 NM NM ALISTO PROJE CLIENT: Port LOCATION: 2: DRILLING COM LOGGED BY: 10 20 20 20 25 20 25 25 25 25 2	SEE SITE PLAN ALISTO PROJECT IN CLIENT: Port of A LOCATION: 2277 DRILLING COMPAN LOGGED BY: Christ Companies of Companie	SEE SITE PLAN ALISTO PROJECT NO: 10-270-01 DATE DRILLED: CLIENT: Port of Oakland LOCATION: 2277 Seventh Street, Oakland, California DRILLING METHOD: Cuttingless DRILLING COMPANY: Soils Exploration Srv. CASING ELEVATIO LOGGED BY: Chris Reinheimer: APPROVED BY:				

	ALISTI WALN			LO	G	OF BORING SB-14 Page 1 of	1					
			ALIST	ОР	ROJE	СТ	NO: 10-270-01 DATE DRILLED: 05/11/95					
			CLIEN	CLIENT: Port of Oakland								
	CEE	SITE PLAN	LOCAT	LOCATION: 2277 Seventh Street, Oakland, California								
	SEE	SITE PLAN	DRILL	DRILLING METHOD: Cuttingless								
			DRILL	ING	COM	PAN	(: Soils Exploration Srv. CASING ELEVATION: N/A	\neg				
			LOGGE	D E	3Y:	Chr	Reinheimer APPROVED BY: AI Şevillə					
BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION					
			_		D' '6		Asphaltic concrete/roadbase.					
N/A	0.8	IIIIIIIIIIIIIIiiiiiiiiiiiiiiiiiiiiiiii	-		0.0		gravelly SAND: gray/black, damp; medlum— to coarse—grained sand.					
N/A	3.1	Willimming the Coment	5-			31	SAND: gray, damp to moist; fine— to medium—grained. Auger refusal at 8 feet.					
			10-	-			Boring terminated at 8 feet.					
			15-									
			20-									
			25— -									
			30-									

		O ENGINEERING GROUP UT CREEK, GALIFORNIA			LO	G	OF BORING S	B-15	Page 1 of 1		
			ALIST	0 P	ROJE	CT N	10: <i>10-270-01</i>	DATE DRILLED:	05/11/95		
1			CLIEN	IENT: Part of Oakland							
	QEE	SITE PLAN	LOCA.	TIO	N: 2	277	Seventh Street, Oakland, C	California			
	JLL	SITE FLAN	ORILL	ING	MET	HOD:	Cuttingless				
							: Solls Exploration Srv.	CASING ELEVATIO			
		· · · · · · · · · · · · · · · · · · ·	LOGGI	ED E		Chris	Reinheimer	APPROVED BY: A	li Sevilia		
BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOG	GIC DESCRIPTION			
							Asphaltic concrete/roadt				
N/A	0.2		5-		0.0.0.0	SW	gravelly SAND: gray/blac present.				
N/A	1.2	WWWWWWWW				SP	SAND: green/gray, damp shells to 20%.	to moist; fine- to medi	um-grained;		
N/A	3.8		10-			CL	CLAY: mottled gray/black 20%.	cand green/gray, wet;	organics to		
N/A	NM			I		1_1	Rock In shoe; sheen.				
1			15-				Boring terminated at 14.5	feet.			
			20-								
			25-								
	:		30-								

) ENGINEERING GROUP UT CREEK, CALIFORNIA			LO	G	OF BORING SB-16	age 1 of 1				
	•						NO: 10-270-01 DATE DRILLED: 05/1	11/95				
				IENT: Port of Oakland								
	SEE	SITE PLAN	LOCATION: 2277 Seventh Street, Oakland, California DRILLING METHOD: Cuttingless									
		:				Y: Soils Exploration Srv. CASING ELEVATION:	N/A					
			<u> </u>				s Reinheimer APPROVED BY: Al Se					
BLOWS/6 IN	PID VALUES	WELL DIAGRAN	DEPTH feet	,,	ģ	SOIL CLASS	GEOLOGIC DESCRIPTION					
		1					Asphaltic concrete/roadbase.					
N/A	0.8				0.0	SW	gravelly SAND: black, damp; medlum- to coarse-grain sand; gravel to 2"+; some clay blobs.	ned				
N/A	1.8	WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	5-				SAN⊡: green/gray, damp to moist; fine— to medium—g shells to 5%.	grained;				
N/A	NM	MINIMINI	10-			CL	CLAY: gray, maist to wet; product on sampler.					
N/A	NM		15-	I		sc	clayey SAND: gray/black; fine— to medium—grained s shells to 5%; sheen on sample. Boring terminated at 15 feet.	sand;				
			20-	-								
			25									

	LOG OF BORING SB-17 Page 1 of 1														
	ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 05/11/95														
					CLIENT: Port of Oakland										
	^	SITE PLAN	LOCATION: 2277 Seventh Street, Oakland, California												
	SEE	DRILLING METHOD: Cuttingless													
						DRILLING COMPANY: Soils Exploration Srv. CASING ELEVATION: N/A									
			LOGGE	SevIIIa											
BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	DEPTH feet SAMPLES SAMPLES SOIL CLASS SOIL CLASS											
		1			- 4		Asphaltic concrete/roadbase.								
N/A	0.2		5-				gravelly SAND: medlum gray/green, damp; fine- to medlum-grained sand; gravel to 2" approximately fi	0%.							
N/A	NM	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	-			SP	SAND; medium green/gray, moist to wet; fine- to medium-grained; shells to 2%.								
N/A	NW		10 -			CL	CLAY: gray/black; organics to 10%; some medium-g sand.	grained							
N/A	NM		15 —	工	<u> </u>	SP	SAND: gray/black, wet to saturated; medium- to coarse-grained sand; shell fragments to approximate Boring terminated at 15 feet.	ately 1%.							
			20-												
			25-												
			30-												

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ALISTO ENGINEERING GROUP WALNUT CREEK, CALIFORNIA			LOG OF BORING MW-4 Page 1 of 1										
			ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 08/25/95										
	ļ			CLIENT: Port of Oakland									
	SEE	SITE PLAN	LOCATION: 2277 E. 7th Street, Oakland, CA. DRILLING METHOD: Hollow-stem auger (7 3/4"); 2" split-spoon sampler										
			DRILLING COMPANY: Mitchell Drilling Envtl. CASING ELEVATION: 13.15 'MSL										
	_		LOGGED (LOGGED BY: Chris Reinheimer APPROVED BY: AI Seville									
BLOWS/6 IN	PID VALUES	WELL DIAGRAM	DEPTH faet SAMPLES	SAMPLES SAMPLES SOIL CLASS SOIL CLASS SOIL CLASS									
						3" asphalt; 2.2' roadbase							
7,7,7	0		Bentonite Seaf		SC	clayey SAND: mottled dar medium dense; clayey ble approximately 5%.	rk brown and medium ta bs to approximately 105	n, damp, %; organics to					
8,8,11	0	0.010" Statted PVC Screen ———————————————————————————————————	10-	,	CL	silty SAND: dark gray gre clayey shell fragments to	en, moist to wet, mediu approximately 2%.	m∙dens <i>e</i> ; sllty					
4,8,11	NM		Veat Cement			CLAY: dark gray black, m approximately 20%; mediu 2%.	aist to wet, very stiff; on many and to app	organics to roximately					
8,8,11	NM] ₂₀ _]			Same: at 19 feet.							
			25-			Stabilized water level mea	asured on September 6	. 1995.					

ALISTO ENGINEERING GROUP WALNUT CREEK, CALIFORNIA			LOG OF BORING MW-5 Page 1 of 1													
					ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 08/25/95 CLIENT: Port of Oakland											
	SEE SITE PLAN					LOCATION: 2277 E. 7th Street, Oakland, CA.										
						DRILLING METHOD: Hollow-stem auger (7 3/4"); 2" split-spoon sampler										
						DRILLING COMPANY: Mitchell Drilling Envtl. CASING ELEVATION: 13.49 %										
						LOGGED BY: Chris Reinheimer APPROVED BY: Al Sevilla										
BLOWS/8 IN.	SEN VALUES	WELL DIAGRAM	OEPTH feet	SAMPLES SOIL CLASS SOIL CLASS SOIL CLASS SOIL CLASS												
		th. 40 PVC	Seal			SM	3" asphalt; 2.2' roadbase									
6,8,12	3	2° Sch. 40 PVC	Bentonite Seal	III		0.5	SAND: medium brown, damp, medium dense; claye approximately 2%; shell fragments to approximate	y biebs ta ely 2%.								
11,11,18	i	PVC Screen ———————————————————————————————————	10-	<u>-</u> -		SC	clayey SAND: dark gray black, wet, very stiff; or approximately 10%.	rganics to								
6,8,12	٥	— 0.010" Statted PVC Screen —	 	T			Same: at 15 feet.									
8,8,4	0			Ŧ			silty SAND: gray green mottled with Fe oxide sta saturated, medium dense; shells to approximately	aln, wet to / 5%; sand								
			25—				moderately well graded. Stabilized water level measured on September 8									

ALISTO ENGINEERING GROUP WALNUT GREEK, CALIFORNIA			LOG OF BORING MW-7 Page 1 of 1											
<u></u>					ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 08/25/95									
					CLIENT: Port of Oakland									
		0175 81 441	LOCATION: 2277 E. 7th Street, Oakland, CA.											
	SEE	SITE PLAN	DRILLI	DRILLING METHOD: Hollow-stem auger (7 3/4"); 2" split-spaan sämpler										
			DRILLING COMPANY: Mitchell Drilling Envtl. CASING ELEVATION: 14.35 'MSL											
			LOGGE	l Sevilla										
BLOWS/8 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	8 8										
				· [SM	4" asphalt								
10,12,15	0	2° Sch. 40 PVC	Legentomite Seaf	—	· ·	SAND: gray, damp, medium dense; fine- to mediu sand; clayey blebs to 5%.	π'-grained							
12,12,17	0	0.010" Statted PVC Screen ———————————————————————————————————	10-	T	SP	sandy CLAY: brown to black gray, moist, very st as blebs to appproximately 2%.	iit; organics							
11,11,17 12,14,20	0	— 0.010" Stotted PVC Screen	15—			SAND: black gray, wet, medium dense; fine— to medium—grained sand; shell fragments present to Same: olive brown, wet, dense; fine— to medium—g								
12,11,23			. -	<u></u> ■I…		sand.								
			20-			Stabilized water level measured on September 8,	, 1895.							
			30-											

	LOG OF BORING MW-8 Page 1 of 1									
	CLIEN' LOCAT DRILLI DRILLI	ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 08/25/95 CLIENT: Port of Oakland LOCATION: 2277 E. 7th Street, Oakland, CA. DRILLING METHOD: Hollow-stem auger (7 3/4"); 2" split-spoon sampler DRILLING COMPANY: Mitchell Drilling Envtl. CASING ELEVATION: 12.94 LOGGED BY: C. Ladd APPROVED BY: Al Sevilla								
BLOWS/8 IN.	PID VALUES	WELL DIAGRAN	DEPTH feet	SOIL CLASS SOIL CLASS SOIL CLASS SOIL CLASS SOIL CLASS						
8,8,11 14,28,30 19,21,30 12,15,17	8 0	— 0.010" Slatted PVC Screen — 2" Sch. 40 PVC — 1.1111111111111111111111111111111111	1			L 3 9 9 9	gravelly CLAY: mottled greenish gray and olive very stiff; subrounded to angular gravel to fire sandy GRAVEL: grayish brown, wet, very dense subrounded gravels to 2"-dlameter. gravelly SAND: gray, wet, very dense; subround 2"-dlameter. SAND: blue gray, saturated, dense; medium-grasorted; 1/4"-dlameter subrounded gravel to ap 1%. Stabilized water level measured on September	; angular to led gravel to lned sand; well proximately		

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APPENDIX E

FIELD PROCEDURES FOR GROUNDWATER MONITORING WELL DEVELOPMENT AND SAMPLING

FIELD PROCEDURES FOR GROUNDWATER MONITORING WELL DEVELOPMENT AND SAMPLING

Groundwater Monitoring Well Development

The groundwater monitoring wells were developed to consolidate and stabilize the filter pack to optimize well production and reduce the turbidity of subsequent groundwater samples. The monitoring wells were developed by alternately using a surge block and pump to evacuate the water and sediment. Development continued until the groundwater was relatively free of sediment. Well development fluids were placed into DOT-approved drums for disposal.

Groundwater Level Measurement

Before sampling, the groundwater level in each well was measured from the permanent survey reference point at the top of the well casing. The groundwater in each well was monitored for free-floating product or sheen. The depth to groundwater was measured to an accuracy of 0.01 foot from the top of the PVC well casing using an electronic sounder.

Groundwater Monitoring Well Sampling

To ensure that the groundwater samples were representative of the aquifer, the wells were purged of 3 casing volumes, using a bailer, while monitoring stabilization of pH, electrical conductivity, and temperature.

The groundwater samples were collected using a disposable bailer, and transferred into laboratory-supplied containers. The samples were labeled with well number, site identification, date of collection, and sampler's initials, and transported in an iced cooler to a state-certified laboratory following preservation and chain of custody protocol. The sampling technician wore nitrile gloves during purging and well sampling.

APPENDIX F

GROUNDWATER MONITORING WELL DEVELOPMENT AND SAMPLING FIELD SURVEY FORMS

ALISTO Fleid Report							-am
ENGINEERING GROUP Groundwater Sampling GROUP	, Date	: 9-6	-95	Project	No. 10) - 7 ~	70
GROUP I Well Develorment	$t_{ extsf{Dav}:}$	(1)	id 5	- Station	No. 5 &	land	
1575 TREAT BOULEVARD, SUITE 201	Weall	her:	110	Address	227	7 7/1/2	St Calcland
WALNUT CREEK CA 94596 (510) 295-1650 FAX 295-1823		SAMPLE	R: CR	- , ,		· · · · · · · · · · · · · · · · · · ·	
Well ID SAMPLE# WATER DEPTH Well ID SAMPLE	E #	WATER	DEPTH	Well		SAMPLE	WATER DEPTH
MW-1 DTP 8.68 9.45, PT=0.77 MW-6		7.40				T	
MW-2 8 ac-1 9.04 MW-4		9.10					
MW-3 DTP 8.48 13.70 PT=5.99 MW-8	1	7.84		<u> </u>		<u> </u>	
MW-5 6.90		<u> </u>				<u> </u>	
Well ID Depth to Water Diam Cap/Lock Product Depth Thickness	s Gal.	Time	Temp *F	РН	Ē.C.	D.O.	O EPA 601
MW-2 9.04 Z" OK -	2	3:12	70.7	· -	<u>₹.38</u>	NM	O TPH-G/BTEX
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol		7.70	69.7	7.36	8.31	1	O TPH Diesel
15.5-9.04=6.46 x0.16 = 1.03 x3 = 3.09	6	3:29	 	7.34	775	-	O 10G 5520
Purge Method: OSurface Pump ODisp. Tube OWinch ODisp. Bailer(s)OSys F		1				 	Time Sampled
Comments: OK - collected from MW-			1				3:50
Well ID Depth to Water Diam Cap/Lock Product Depth Thickness		Time	Temp *F	рН	Ē.Ç.	D.Q.,	O EPA 601
MW-1 9.45 21 OK 8.68 6.77					The same of the sa	Card II	O TPH-G/BTEX
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVo	ıl.			A ARREST AND A			O TPH Diesel
Not sampled			All remarks and the second				O TOG 5520
Purge Method: OSurface Pump ODIsp.Tube OWInch ODIsp.Bailer(s)OSys F	ort		e litari				Time Sampled
Comments: Product dark brown		<u> </u>		<u> </u>			Not
Well ID Depth to Water Diam Cap/Lock Product Depth Thickness	s Gal.	Time	Temp *F	рН	E.C.	D.O.	O EPA 601
MW-3 13.76 24 OK 8.48 5.99							O TPH-G/BTEX
Total Depth - Water Level= x Well Val. Factor= x#vol. to Purge= PurgeVa	" 				, . .		O TPH Diesel
Not Sampled			70-1-60				O TOG 5520
Purge Method: OSurface Pump ODisp. Tube OWinch ODisp. Bailer(s)OSys F	ort.						Time Sampled
Comments:) hodust don't brown		<u> </u>				<u> </u>	Not
Well ID Depth to Water Diam Cap/Lock Product Depth Thicknes	is Gal.	Time	Temp *F	рН	E.C.	D.O.	O EPA 601
Total Don'th Water Land Well Vol. Footer West La Don't Don't		ļ				<u></u>	O TPH-G/BTEX
-Total Depth - Water Level= x Well-Vol. Factor= x#vol. to Purge= PurgeVo	·	<u> </u>	<u> </u>			}	O TPH Diesei
Para Malla de CO de la Companya de Company	<u> </u>	ļ					O TOG 5520
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Baller(s) OSys F Comments:	'ort	 		<u> </u>			Time Sampled
		1				1	

ALISTO

Field Report / Sampling Data Sheet

STOTE The property Stote Stote	ENGINEERING	⊗ Grou	ndwater Şamı	oling,	Dale	:9-6-	?5	Project 1	10. /C	1-27	<u> </u>
WAINUT CREEK CA 94596 (510) 295-1650 FAX 295-1823	GROUP .	& Well	Develops	rent	Day:	una	45	Station N	10. Sea	Cand	Lease
Well ID Depth to Water Diom Cop/Lock Product Depth Thickness Gal. Time Temp F pH E.C. D.O. O EPA 601 M(J) Y 8 * 78 2 " 2	1575 TREAT BOULEVARD, S	•	,		Wealt	ner: Qu	ar	Address			~ 1
M(1) +	WALNUT CREEK CA 94596	(510) 295-165	0 FAX 295-1823			SAMPLE	R: <u>C 1201</u>	14 herry	ሊያኒ		
Total Depth: Waler Levels XWell Vol. Factors Xilvol. to Purges PurgeVol. 70 6.7. 7.1 1.5.	Well ID Depth to Water	Diam Cap/La	ck Product Depth	Thickness	Gal.	Time	Temp *F	рH	E.C.	D.O.	O EPA 601
Purge Method: OSurface Pump ODisp. Tube OWinch ODisp. Bailer(s)	MW-4 8.48	2" 04		/	5	9:20	·	フィス		NAT	O TPH-G/BTEX
Purge Melhod: OSurface Pump ODIsp.Tube OWinch ODIsp. Baller(s)	Total Depth - Water Level= x \	Well Vol. Factor=	x#vol. to Purge=	PurgeVol.	10		67.1	7.1/	1.53		O IPH Diesel
Comments:	18.0 - 8.48 = 9.52	x0.16 =1	52 x 10 = 19	5.20	20	P:43	67.1	714	1.57	V	
Well ID Depth to Water Dlam Cap/Lock Product Depth Thickness Gal. Time Temp F PH E.C. D.O. Depth Ph. Ph	Purge Method: OSurface Pump	ODisp.Tube OV	Vinch ODIsp. Bailer(s	s)OSys Pc	ort						
MN - 5											
Total Depth Waler Level= x Well Vol. Factor= x thvol. to Purge= PurgeVol. 15 (36.8) 7.46 2.69 O 1PH Diesel	Well ID Depth to Water	Dlam Cap/La	ck Product Depth	Thickness	Gal.	Time	Temp 'F			D.O.	
Purge Method: OSurface Pump ODisp. Tube OWinch ODisp. Bailer(s)	MW-5 6.90	2" ac			10	10:30	66.7		1	Nac	O IPH-G/BTEX
Purge Melhod: OSurface Pump ODIsp. Tube OWinch ODIsp. Bailer(s) OSys Port				PurgeVol.	15		66.8	7.46	2.69		O 1PH Diesel
Comments:	18.0 -6.90 = U.1 X	0.16 = 1.77	X10 = 17.7		Zs	10:50	60.7	7 49	Z-66	<u> </u>	
Well ID Depth to Water Diam Cap/Lock Product Depth Thickness Gal. Itime Temp F pH E.C. D.O. O EPA 601	Purge Melhod: OSurface Pump	ODisp.Tube O\	Vinch ODisp. Bailer(s	s)OSys Po	ort						
MW - 6											
Total Depth - Water Level= x Well Vol. Factor= xilvol. to Purge= PurgeVol. 15 67, 7.58 7.47 0 1PH Diesel 20 7.40 = 10.6 × 0.16 = 1.69 × /0 = 16.90 20 7/.34 67.7 7.35 7.44 1 0 10G 5520 1 1 1 1 1 1 1 1 1	Well ID Depth to Water		ck Product Depth	Thickness	Gal.	1ime	 				
Purge Melhod: OSurface Pump ODisp. Tube OWinch ODisp. Baller(s) OSys Port O Time Sampled						11:00	. <u> </u>	1		IVII.	
Purge Melhod: OSurface Pump ODisp. Tube OWInch ODisp. Baller(s)OSys Pot. Comments:	•		-	-	15					*	,
Comments: Jeen on Ruge Not Sampled Not Well ID Depth to Water Diam Cap/Lock Product Depth Thickness Gal. Time Temp F pH E.C. D.O. D.O. Depth Depth S./0 Z' Old Depth Thickness Gal. Time Temp F pH E.C. D.O. Depth Depth Depth Old Depth D	18.0 - 7.40 = 10.6	X0.16 =	1.69 X10 =	16.90	20	11:34	67.2	7.33	2.44	"હે	, •
Well ID Depth to Water Diam Cap/Lock Product Depth Thickness Gal. Ilime Temp F DF E.C. D.O. O EPA 601 MW - 4 S.70 Z a√ -		<u>`</u>			·	,					l
MW - 4 9.10 2" ad -									<u> </u>		
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge= PurgeVol.			ck Product Depth	Thickness			,				
		, ,			1,	14.40		l		hW	
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bafler(s)OSys Port Time Sampled Comments: // 35/2 Well ID Depth to Water Diam Cap/Lock Product Depth Thickness Gal. Ilme lemp *F pH E.C. D.O. O EPA 601											
Comments: Vell ID Depth to Water Diam Cap/Lock Product Depth Thickness Gal. Ilime Iemp *F pH E.C. D.O. O EPA 601 MW - 8 7.84 2						1/115	1001	g,Z1	2,69	Α	, •
Well ID Depth to Water Diam Cap/Lock Product Depth Thickness Gal. Time Temp*F pH E.C. D.O. O EPA 601		ODisp.Tube O\	Vinch ODIsp. Bailer(s) OSys Pc	ort						
MW-8 7.84 2' 04 3/065 3/65 10 2:44 66.1 7.18 MM O TPH-G/BTEX_ Tolai Depth - Water-Level= x-Well Vol. Factor= x#vol. to Purge= PurgeVol. 15	<u> </u>							<u> </u>	P 75	- 15 A	
Total Depth - Water Level = x-Well Vol. Factor = x#vol. to Purge = Purge Vol. 15	I		ck Product Depth		 	······································		рн			
·	1 77 7 1 1	- i			l .	2:44	66.1		7.18	m	O TPH-G/BTEX
$19-0-7.84=10.16\times0.16=1.62\times10=16.7$ $10-10-10-10-10-10-10-10-10-10-10-10-10-1$	•				15		-			- }	, -
							66.7	7.90	2.11		_
Purge Method: OSurface Pump ODisp.Tube, OWinch ODisp. Baller(s)OSys Port											
Comments: Not sampled black brain globuly	Comments: Not 5	sampled.	stack brown					 			Not

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING	Ø	Ground	lwater Sam	pling	Date	: 9-1	1-95	Project i	No. /0	-270	
GROUP	\sim	MW-	lwater Sam リをMW-	٦	Day:	M	en	Station 1	Vo. Sea		
1575 TREAT BOULEVA	ARD, SUITE 20		, 4		Weath	ner:	200	Address	227	7 7+6	St Caleton
WALNUT CREEK CA	•		AX 295-1823	1		SAMPLE	:R:	· .	<u>. </u>		
Well ID Depth to	Water Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	рН	E.C.	D.O.	O EPA 601
MW-4 8.5	1 24	OK			7	2:20	67-9	7.49	1.48	NW	O TPH-G/BTEX
Total Depth - Water Leve	i= x Well Vo	l. Factor=	x#vol. to Purge=	PurgeVol.	4	2:28	67.2	7.61	1.67		O TPH Diesel
18-8.51					6	2:36	67.2	7.21	1.66		O TOG 5520
Purge Method: OSurfac	e Pump ODisp	Tube OWin	ch ODisp. Baller	(s)OSys Po	ort					y	Time Sampled
Comments:							<u> </u>			1	7:43
Well ID Depth to	Water Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	На	E.C.	D.O.	O EPA 601
MW-5 6.53	3 7"	06			2	3:16	66.9	7.72	2.68	NM	O TPH-G/BTEX
Total Depih - Water Leve	el= x Well Vo	l. Factor=	x#vol. to Purge=	PurgeVol.	4	3:21	66.9	7.68	2.61	1	O TPH Diesel
18-6.90					6	3:33	669	7,61	2.71		O TOG 5520
Purge Method: OSurfac	e Pump ODIsp	Tube OWin	ch ODisp. Baile	(s)OSys Po	ort		· ·			7	Time Sampled
Comments:						<u> </u>			<u> </u>	1	3,42
Well ID Depth to	Water Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	Нq	E.C.	D.O.	O EPA 601
1	l									_	O TPH-G/BTEX
Total Depth - Water Leve	el= x Well Vo	l. Factor=	x#vol. to Purge:	= PurgeVol.							O TPH Diesel
											O TOG 5520
Purge Method: OSurfac	e Pump ODisp	.Tube OWin	ch ODisp. Baile:	r(s)OSys Po	ort						Time Sampled
Comments:					<u> </u>						
Well ID Depth to	Water Dlam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	рН	E.C.	D.O.	O EPA 601
											O TPH-G/BTEX
Total Depth - Water Leve	el= x Well Vo	I. Factor=	x#vol. to Purge:	= PurgeVol.							O TPH Diesel
											O TOG 5520
Purge Method: OSurfac	e Pump ODisp	.Tube OWin	ch ODisp. Baile	r(s) O\$ys Pc	ort	<u></u>					Time Sampled
Comments:											
Well ID Depth to	Water Dlam	Cap/Lock	Product Depth	Thlckness	Gal.	Time	Temp *F	pН	E.C.	D.O.	O EPA 601
											O TPH-G/BTEX
Total Depth - Water Leve	el= x Well Vo	l. Factor=	x#vol. to Purge=	= PurgeVol.					1	·····	O TPH Diesel
				-	<u> </u>						O TOG 5520
Purge Method: OSurfac	e Pump ODisp	.Tube OWin	ch ODisp. Baile	r(s) OSys Po	ort						Time Sampled
Comments:											
	PAGEOF										

ALISTO ENGINEERING GROUP GROUNDWATER MONITORING

Client: Port of Orwind Alisto Project No: 10-270.03-005. Service Station No: Bildy C401	Date: 9/28/95 Field Personnel: DC Site Address: 2777 7/2 34.
FIELD ACTIVITY:	QUALITY CONTROL SAMPLES:
Groundwater Monitoring Groundwater Sampling Well Development	Mu-b QC-1 Sample Duplicate (Well ID) QC-2 Trip Blank QC-3 Rinsate Blank

Well ID	Well Diam	Order Measured/ Sampled	Total Depth	Depth to Water	Depth to Product	Product Thick- ness	Comments
mw-2	211	1	-15.00	5.17	φ		
mw-7	1	7	1	4.74			
mu-5		1 3	2 18.00	6.56')		
mw-L)		4	z K.00'				
murb		3	215.00	CIAS.	W	-	DTW-7.74! AC
mu-1		6	nm	9.85	8.74'	1,11	not sempled in to FP
mw-8		1 7	nm_	8,91	8.79'	0.12	
mw-3	1)	8	nm	13.60	7.801	5.80'	
							-

Notes:					
				•	
			· · · · · · · · · · · · · · · · · · ·		
			<u> </u>		
	PS 7 0+	4			

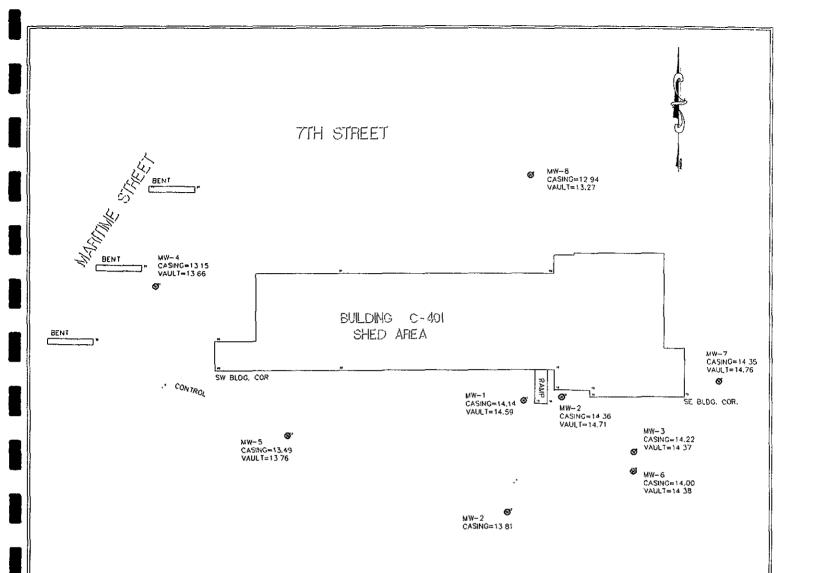
FORM: F52/121592

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING	⊘ Groun	dwater Samp	oling	Dale:	9/28	195	Project I	Vo. 10	0F6-	-03-003
GROUP				Day:		۸ ۸۲	Stallon N		122	C401 ·
1575 TREAT BOULEVARD, S	SUITE 201			Wealh	ier: 50	\sim	Address	72 7 3	~ + + + ~	St, Dankend Ut
WALNUT CREEK CA 94596		FAX 295-1823			SAMPLE					<u> </u>
Well ID Depth to Water			Thickness	Gal.	Ilme	Temp 'F	рН	E.C.	D.O.	O EPA 601
MW-2 9.17'	Z'I O'L	P	P	1	1407	759	7.90	2.31		Ø IPH-G/BIEX_}→
Total Depth - Water Level- x	Well Vol. Factor:	xlivol. to Purge=	PurgeVol.	2	1411	71.2	7.74	7.30		₩ IPH Diesel_1¥
15.00-9.17=				3	1415	70.7	7.82	7.30		O 10G 5520
Purge Melhod: Surface Purnt	ODisp.Tube OWir	nch ODisp. Baller(s)	OSys Po	or t						Time Sampled
Comments:									75 25	1470
Well ID Depth to Water	Diam Cap(Loc)	Product Depth	Thickness	Gal.	lime _	Temp *F		E.C.	D.O.	O EPA 601
mw-7 9.74	711 replus	<i>p</i>	P	ì	1427	71.7	7.63	1.91		O IPH-G/BIEX_HE
Total Depth - Water Level= x	Well Vol. Factor=	xtivol. to Purge=	PurgeVol.	2	1432	71.7		1.25		O IPH Diesel
17.15-9.74=	5.26 4.16	=0.84x3=2	1.53	2.75	1436	71.8	7.53	1.52		O 10G 5520
Purge Melhod: Surface Pump	ODisp.Tube OWin	nch ODIsp. Bailer(s)OSys Po	orl						Time Sampled
Comments:				<u> </u>		<u>L</u>		<u> </u>	5.75	1440
Well ID Depth to Water	Diam Cap Coc	Product Depth	Ihickness	Gal.	lime	Temp *	 	E.C.	D.Ö.	O EPA 601
mul 5 6.56	ZII represe		Ø	2	1447	74.7	7.73	2.34		DIPH-G/BIEX_F
Total Depth - Water Level= x	Well Vol. Factor=	xffvol. lo Purge=	PurgeVol.	4	1453	74.1	7.43	7.40		PH Diesel_ 14
18.00-6.56=	11.44x.16=	: 1.7343 = 5	.49	5.5	1457	73.6	7.35	2,40		O TOG 5520 Time Sampled
Purge Melhod: Surface Pump	ODisp.Tube OW	nch ODisp. Boller(s	s) OSys Po	ort			ļ <u>.</u>		· · · · · · · · · · · · · · · · · · ·	1
Comments:				<u> </u>			<u> </u>		D.O.	0 EPA 601
Well ID Depth to Water	Dlain Cap/Coc	Product Depth	Thickness		Time	lemp *		E.C.	υ.υ.	, •
mu-4 8.54	211 refug		Ψ	1.5	1506	71.4	38.1	1,40		PH Diesel H
Total Depth - Water Level= x					1509	318	3.6	7.34	· ·····	O 10G 5520
Purge Method: Sourface Purn	7.46 x.16=	1.51x3=4	1.54	4.75	1314	72.2	7.65	1.31		Time Sampled
Purge Melhod: Sturface Purn	p ODisp.Tube OWi	inch ODIsp. Bailer(s	s)OSys Po	71		ļ	<u> </u>			1520
Comments:				<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	D.O.	O EPA 601
Well ID Depth to Water	Diam Capilos	k Product Depth	Thickness	Gal.	lime	Temp *	pll	E.C.	0.0.	
MW-6 7.74	711 replaced	- Ρ -	Shoen	1	1530	71.4				O TPH-G/BIEX_A
Iotal Depth - Water Level= x		x#vol. lo Purge=	PurgeVol	2	1533	72.9	7.31	3.58		Q TPH Diesel_ (**
15.00-7.74=	7.26-1.16=	1.16x3=3	48	3.5	1537	73.1	7.24	3,62		O 10G.5520 Time Sampled
Purge Melhod: Surface Purn	p ODisp.Tube OW	lnch ODlsp. Baller(s	s)OSys P	orl	<u></u>	<u> </u>	1	L	<u> </u>	1540
Comments: Qu-1	from this	1120								1 1 2 7 0
			PAGE_) _	_				

APPENDIX G WELL ELEVATION SURVEY MAP



BENCHMARK:
TOP OF CASING ELEVATIONS, AS SHOWN ON PLANS PROVIDED
BY ALISTO ENGINEERING, INC. ON 9-8-95, ON MW-1. PORT OF
OAKLAND, AND MW-2, RINGSBY TERMINALS, WERE HELD WITH THE
FOLLOWING ELEVATIONS. 14.14(0) & 13.80(9), RESPECTIVELY

STRUCTURE	NORTHING	EASTING	ELEVATION
MW-2, CASING			13.809
MW-1. CASING	5066 49	4976.17	14,140
MW-1, VAULT			14.59
MW-2, CASING	5069,96	5014.05	14.36
MW-2, VAULT			14.71
MW-3, CASING	5014.92	5085.90	14.20
MW-3, VAULT			14.37
MW-4, CASING	5183.91	4604 94	13.15
MW-4, VAULT			13.66
MW-5, CASING	5031.52	4737.19	13 49
MW-5, VAULT			13 76
MW-6, CASING	4995 30	5085.52	14.00
MW-6, VAULT			14.38
MW-7. CASING	5086.35	5171,47	14.35
MW-7, VAULT			14.76
MW-8, CASING	5298.39	4982 89	12.94
MW-B. VAULT			13.27
SW BLDG COR	5096.96	4664.07	
SE BLDG COR	5070.46	5136.09	



□ PLS SURVEYS, INC.

1202 LINCOLN AVENUE ALAMEDA, CA 94501

> (510) 522-1790 FAX(510) 522-6207

PORT OF OAKLAND

BLDG. C-401 2277 SEVENTH STREET OAKLAND, CALIFORNIA PROJECT NO. 10-270

SCALE	N.T.S.						
DATE	09/28/95						
BA	JMB/JET						
JOB NO.	95056						

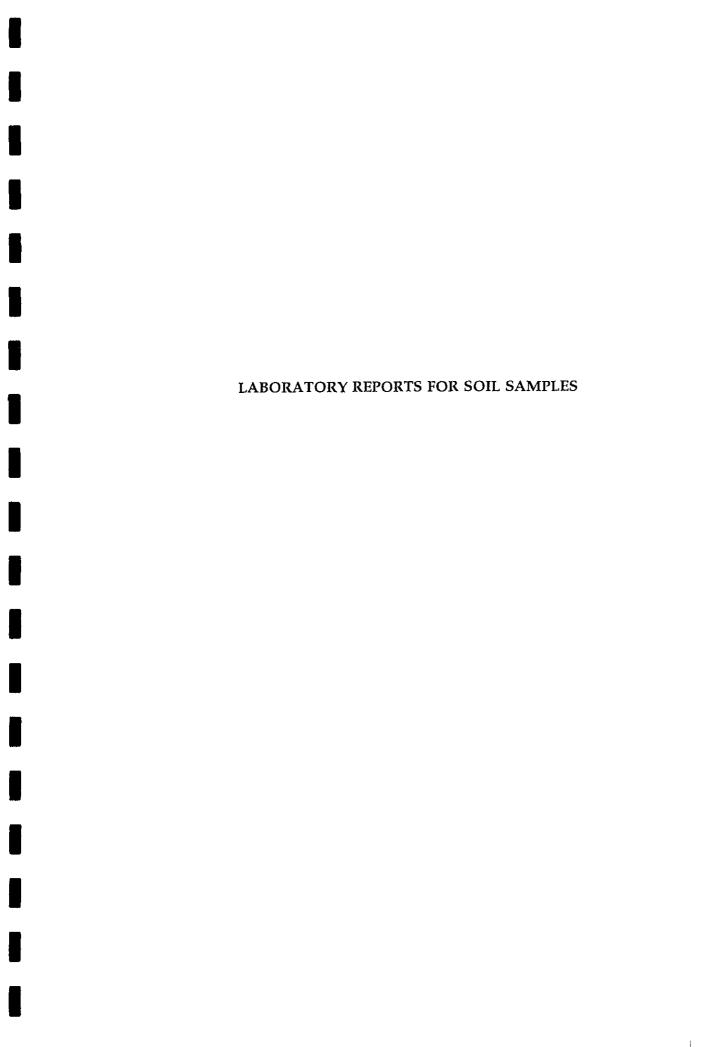
APPENDIX H

FIELD PROCEDURES FOR CHAIN OF CUSTODY DOCUMENTATION, LABORATORY REPORTS, AND CHAIN OF CUSTODY RECORDS

FIELD PROCEDURES FOR CHAIN OF CUSTODY DOCUMENTATION

Samples were handled in accordance with the California Department of Health Services guidelines. Each sample was labeled in the field and immediately stored in a cooler and preserved with blue or dry ice for transport to a state-certified laboratory for analysis.

A chain of custody record accompanied the samples and included the site and sample identification, date of collection, analysis requested, and the name and signature of the sampling technician. When transferring possession of the samples, the transferee signed and dated the chain of custody record.



1252 Quarry Lane P.O. Box 9019 Pleasanton, CA 94566 (510) 426-2600 Fax (510) 426-0106



May 30, 1995

Mr. Brady Nagle ALISTO ENGINEERING GROUP 1575 Treat Blvd., Suite 201 Walnut Creek, CA 94588

> Client Ref.: 10-270-01 Clayton Project No.: 95051.87

Dear Mr. Nagle:

Attached is our analytical laboratory report for the samples received on May 15, 1995. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

Please note that any unused portion of the samples will be discarded after June 29, 1995, unless you have requested otherwise.

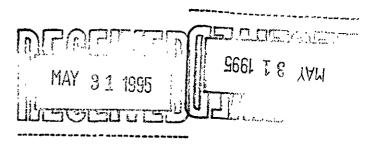
We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Harriotte A. Hurley, CIH Director, Laboratory Services San Francisco Regional Office

HAH/tjb

Attachments



Page 2 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-7 3.0

a,a,a-Trifluorotoluene

Lab Number:

Surrogates

9505187-01A SOIL

Sample Matrix/Media: Preparation Method: EPA 5030 Method Reference: EPA 8015

EPA 8015/8020

Date Sampled:

05/11/95 Date Received: 05/15/95

Date Prepared: 05/23/95

50 ~ 150

Date Analyzed: 05/24/95

Analyst:

87

WAS

Recovery (%) QC Limits (%)

	·		1
Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND 0.006 ND ND ND	0.005 0.005 0.005 0.005 0.005

98-08-8

Not detected at or above limit of detection Information not available or not applicable

esults are reported on a wet-weight basis, as received.

of 20 Page 3

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-7 9.0

Lab Number:

<u>Surrogates</u>

a, a, a-Trifluorotoluene

9505187-03A

Sample Matrix/Media:

SOIL

Preparation Method: Method Reference:

EPA 5030

EPA 8015/8020

Date Sampled:

05/11/95 Date Received: 05/15/95 Date Prepared: 05/23/95

Date Analyzed:

05/24/95

QC Limits (多)

50 - 150

Analyst:

Recovery (%)

53

WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	${f N}{f D}$	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes		ND	0.005
Gasoline		ND	0.3

98-08-8

Not detected at or above limit of detection ND: Information not available or not applicable

Results are reported on a wet-weight basis, as received.

Page 4 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

sample Identification: SB-8 3.0 Lab Number:

9505187-05A

Date Sampled: 05/11/95 Date Received: 05/15/95

Recovery (%) QC Limits (%)

ample Matrix/Media:

SOIL

Date Prepared: 05/23/95 Date Analyzed: 05/24/95

reparation Method: EPA 5030
Method Reference: EPA 8015/8020 Method Reference:

Analyst:

WAS

			1
			Method
•			Detection
		Concentration	Limit
nalyte	CAS #	(ma/ka)	(ma/ka)

TEX	/G	a s o	٦	iı	ne.
	<i>,</i> 0	z > c	_		

11117 000011110			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95~47-6	ND	0.005
p,m-Xylenes	 –	0.005	0.005
Gasoline		ND	0.3

S	u	r	r	0	q	a	t	e	S

a,a,a-Trifluorotoluene 98-08-8

112

50 - 150

Not detected at or above limit of detection Information not available or not applicable

Results are reported on a wet-weight basis, as received.



Page 5 of 20

05/11/95

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-8 9.0 Lab Number:

9505187-07A SOIL

Sample Matrix/Media: Preparation Method:

EPA 5030

Method Reference:

EPA 8015/8020

Date Sampled:

Date Received: 05/15/95 Date Prepared: 05/23/95 Date Analyzed: 05/24/95

Analyst: WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND 15 a	0.005 0.005 0.005 0.005 0.005
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	76	50 - 150

Not detected at or above limit of detection ND: --: Information not available or not applicable

Results are reported on a wet-weight basis, as received.

a Sample appears to be weathered gasoline.

Page 6 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-9 3.0

Date Sampled:

05/11/95

Lab Number:

9505187-09A

Date Received: 05/15/95 Date Prepared: 05/23/95

Sample Matrix/Media: Preparation Method:

EPA 5030

SOIL

Date Analyzed:

05/24/95

Method Reference:

EPA 8015/8020

Analyst:

WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			

Benzene Ethylbenzene Toluene o-Xylene p.m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND	0.005 0.005 0.005 0.005 0.005
Gasoline	- -	2.2 a	0.3

Ĺ	u	ŗ	r	O	q	a	τ	е	S	
	_				_					

94

Recovery (%)

QC Limits (%)

a, a, a-Trifluorotoluene

98-08-8

50 - 150

Not detected at or above limit of detection Information not available or not applicable

esults are reported on a wet-weight basis, as received. Sample appears to be weathered gasoline.

Page 7 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-9 9.0

Date Sampled: 05/11/95

Lab Number: Sample Matrix/Media:

9505187-11A SOIL

Date Received: 05/15/95 Date Prepared: 05/23/95

Preparation Method:

EPA 5030

Date Analyzed: 05/24/95

Method Reference:

EPA 8015/8020

Analyst:

WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND 18 a	0.005 0.005 0.005 0.005 0.005
<u>Surrogates</u>		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	80	50 - 150

ND: Not detected at or above limit of detection --: Information not available or not applicable

Results are reported on a wet-weight basis, as received.

a Sample appears to be weathered gasoline.

Page 8 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-10 3.0 Lab Number:

ample Matrix/Media:

Freparation Method:

9505187-13A SOIL

EPA 5030

Date Sampled: Date Received:

05/11/95 05/15/95 Date Prepared: 05/23/95 05/24/95

Date Analyzed:

Method Reference:	EPA 8015/8020		Analyst:	WAS
nalyte		CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
TEX/Gasoline				
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline		71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND 0.8 ^a	0.005 0.005 0.005 0.005 0.005 0.3
<u>Surrogates</u>			Recovery (%)	OC Limits (%)
a,a,a-Trifluorotolue	ne	98-08-8	121	50 - 150

ND: Not detected at or above limit of detection Information not available or not applicable

 $oldsymbol{ t R}$ esults are reported on a wet-weight basis, as received. Sample appears to be weathered gasoline.



Page 9 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-10 9.0

Lab Number:

9505187-15A

Sample Matrix/Media:

SOIL

Preparation Method:

EPA 5030

Method Reference:

EPA 8015/8020

Date Sampled:

05/11/95 Date Received: 05/15/95

Date Prepared:

05/23/95

Date Analyzed:

05/24/95

Anal

-	ıaıyı	St	•	WAS
---	-------	----	---	-----

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	0.013	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes		ND	0.005
Gasoline		ND	0.3
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	85	50 - 150

ND: Not detected at or above limit of detection Information not available or not applicable

Results are reported on a wet-weight basis, as received.

Page 10 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-11 9.0

Lab Number:

9505187-18A

Sample Matrix/Media:

SOIL

Preparation Method: EPA 5030 Method Reference:

EPA 8015/8020

Date Sampled:

05/11/95

Date Received: Date Prepared:

05/15/95

Date Analyzed:

05/23/95 05/24/95

Analyst:

L	1111 0013/0020		Allaryst:	WAS
Analyte	(CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline				
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	1) 10	71-43-2 00-41-4 08-88-3 95-47-6 	ND ND ND ND ND	0.005 0.005 0.005 0.005 0.005
<u>Surrogates</u>			Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	9 9	98-08-8	74	50 - 150
_				1

Not detected at or above limit of detection Information not available or not applicable

esults are reported on a wet-weight basis, as received.



Page 11 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-12 9.0

Date Sampled: 05/11/95

Lab Number:

9505187-22A

05/15/95

Sample Matrix/Media:

SOIL

Date Received: Date Prepared: 05/23/95

Preparation Method:

EPA 5030

Date Analyzed:

05/24/95

Method Reference:

EPA 8015/8020

Analyst:

WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			

<u>D 1 C.</u>	<u>^ </u>	<u> </u>	$\alpha \pi^{-}$	<u> </u>

71-43-2	ND	0.005
100-41-4	ND	0.005
108-88-3	ND	0.005
95-47-6	ND	0.005
	ND	0.005
·-	4.7 a	0.3
	100-41-4 108-88-3 95-47-6	100-41-4 ND 108-88-3 ND 95-47-6 ND

Surrogates		Recovery (%)	<u> QC Limits (१)</u>
a,a,a-Trifluorotoluene	98-08-8	64	50 - 150

ND: Not detected at or above limit of detection --: Information not available or not applicable

Results are reported on a wet-weight basis, as received.

a Sample appears to be weathered gasoline.



Page 12 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-13 9.0

Lab Number:

9505187-26A

ample Matrix/Media:

SOIL

reparation Method: EPA 5030 Method Reference: EPA 8015 Method Reference:

EPA 8015/8020

Date Sampled:

05/11/95 Date Received: 05/15/95 Date Prepared: 05/23/95

Date Analyzed: 05/24/95

Analyst:

WAS

•	·	-	
nalyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
TEX/Gasoline			
Benzene Ethylbenzene	71-43-2 100-41-4	ND ND	0.005

Toluene	100-41-4 108-88-3	ND ND	0.005 0.005
o-Xylene	95-47-6	ND	0.005
_ p,m-Xylenes	- -	ND	0.005
Gasoline		ND	0.3
<u>Surrogates</u>		Recovery (%)	OC Limits (%)
a a maifluonataluss	00 00 0	0.0	50 150

a, a, a-Trifluorotoluene

98-08-8

88

 $50_1 - 150_1$

Not detected at or above limit of detection Information not available or not applicable

esults are reported on a wet-weight basis, as received.



Page 13 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-14 6.0
Lab Number: 9505187-29A
Sample Matrix/Media: SOIL
Preparation Method: EPA 5030
Method Reference: EPA 8015/8020

Date Sampled: 05/11/95
Date Received: 05/15/95
Date Prepared: 05/23/95
Date Analyzed: 05/24/95
Analyst: WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND 40 a	0.05 0.05 0.05 0.05 0.05
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	53	50 - 150

ND: Not detected at or above limit of detection --: Information not available or not applicable

Results are reported on a wet-weight basis, as received. Detection limit increased due to presence of heavier hydrocarbons. a Sample appears to be weathered gasoline.

Page 14 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-15 6.0

a,a,a-Trifluorotoluene

9505187-31A

_Lab Number:

Surrogates

Sample Matrix/Media:

Preparation Method: EPA 5030 Method Reference:

SOIL

EPA 8015/8020

Date Sampled:

Date Received: 05/15/95

Date Prepared: 05/23/95 Date Analyzed: 05/24/95

Recovery (%) QC Limits (%)

Analyst:

90

WAS

05/11/95

50 - 150

		-	
Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND	0.005 0.005 0.005 0.005 0.005

98-08-8

ND: Not detected at or above limit of detection Information not available or not applicable

Results are reported on a wet-weight basis, as received.

Page 15 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-16 6.0

Lab Number:

9505187-34A

Sample Matrix/Media:

SOIL

Preparation Method: Method Reference:

EPA 5030

EPA 8015/8020

Date Sampled:

05/11/95 05/15/95 Date Received:

Date Prepared:

05/23/95 05/24/95

Date Analyzed: Analyst:

WAS

4 11	14.1	~ ~	• •		•	 •	

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND 130 a	0.1 0.1 0.1 0.1 0.1
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	108	50 - 150

Not detected at or above limit of detection ND: Information not available or not applicable

Results are reported on a wet-weight basis, as received. Detection limit increased due to presence of heavier hydrocarbons. Sample appears to be weathered gasoline.



Page 16 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

sample Identification: SB-17 6.0

Lab Number:

9505187-38A

ample Matrix/Media:

SOIL

Preparation Method: Method Reference:

EPA 5030

EPA 8015/8020

Date Sampled: Date Received:

05/12/95 05/15/95

Date Prepared:

05/23/95

Date Analyzed: Analyst:

05/25/95

WAS

nalyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
TEX/Gasoline			

BTEX/Gasoline			
Benzene	71-43-2	ND	0.5
Ethylbenzene	100-41-4	0.9	0.5
Toluene	108-88-3	ND	0.5
o-Xylene	95-47-6	ND	0.5
p,m-Xylenes		1.4	0.5
Gasoline		1100 a	0.3

<u>Surrogates</u>		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	129	50 - 150

Not detected at or above limit of detection Information not available or not applicable

kesults are reported on a wet-weight basis, as received. Detection limit increased due to presence of heavier hydrocarbons. Sample appears to be weathered gasoline.



Page 17 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: SB-17 9.0

a,a,a-Trifluorotoluene

9505187-39A

05/12/95

Lab Number:

SOIL

Date Received: 05/15/95

Sample Matrix/Media:

Date Prepared: 05/23/95

Preparation Method:

EPA 5030

Date Analyzed: 05/24/95

Date Sampled:

50 - 150

Method Reference:

EPA 8015/8020

Analyst:

76

WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes		ND	0.005
Gasoline		2.4a	0.3
<u>Surrogates</u>		Recovery (%)	QC Limits (%)

98-08-8

ND: Not detected at or above limit of detection Information not available or not applicable

Results are reported on a wet-weight basis, as received. a Sample appears to be weathered gasoline.

Page 18 of 20

Analytical Results

for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: METHOD BLANK

⊾ab Number:

9505187-41A

SOIL

ample Matrix/Media: Preparation Method:

EPA 5030

Date Sampled:

Date Received:

Date Prepared:

Date Analyzed:

05/23/95 05/24/95

- - -

Method Reference:	EPA 8015/8020		Analyst:	WAS
nalyte		CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline				
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline		71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND	0.005 0.005 0.005 0.005 0.005 0.3
Surrogates a,a,a-Trifluorotolu	ene	98-08-8	Recovery (%)	OC Limits (%)

ND: Not detected at or above limit of detection Information not available or not applicable

Results are reported on a wet-weight basis, as received.



Page 19 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: See Below

Date Received: 05/15/95

Lab Number:

9505187

Date Extracted: 05/19/95

Sample Matrix/Media:

SOIL

Date Analyzed:

05/19/95

Extraction Method: Method Reference:

EPA 3550

EPA 8015 (Modified)

Lab Number	Sample Identification	Date Sampled	TPH-D (mg/kg)	Method Detection Limit (mg/kg)
-01	SB-7 3.0	05/11/95	ND	
-03	SB-7 9.0	05/11/95	ND	1
-05	SB-8 3.0	05/11/95	ND	$\bar{1}$
-07	SB-8 9.0	05/11/95	2	$\bar{1}$
-09	SB-9 3.0	05/11/95	ND	$\overline{\overline{1}}$
-11	SB-9 9.0	05/11/95	230	1
-13	SB-10 3.0	05/11/95	ND	$\overline{\overline{1}}$
-15	SB-10 9.0	05/11/95	ND	ī
-18	SB-11 9.0	05/11/95	ND	1
-22	SB-12 9.0	05/11/95	ND	1
-26	SB-13 9.0	05/11/95	ND	ī
-29	SB-14 6.0	05/11/95	1200	ī
-31	SB-15 6.0	05/11/95	ND	<u>,</u>
-34	SB-16 6.0	05/11/95	170	1
38	SB-17 6.0	05/12/95	14000	1
.39	SB-17 9.0	05/12/95	26	ī
41	METHOD BLANK		ND	1

ND: Not detected at or above limit of detection

Results are reported on a wet-weight basis, as received.

TPH-D = Extractable petroleum hydrocarbons from C10 to C20 quantitated as diesel.

Information not available or not applicable



Page 20 of 20

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.87

Sample Identification: See Below

Date Received: 05/15/95

Lab Number:

9505187

Date Extracted: 05/19/95

Sample Matrix/Media:

SOIL

Date Analyzed: 05/19/95

Extraction Method: Method Reference:

EPA 3550

EPA 8015 (Modified)

Lab Number	Sample Identification	Date Sampled	TPH-O (mg/kg)	Method Detection Limit (mg/kg)
-01	SB-7 3.0	05/11/95	12	4
-03	SB-7 9.0	05/11/95	ND	4
-05	SB-8 3.0	05/11/95	260	4
-07	SB-8 9.0	05/11/95	13	4
-09	SB-9 3.0	05/11/95	520	4
-11	SB-9 9.0	05/11/95	300	4
-13	SB-10 3.0	05/11/95	340	4
-15	SB-10 9.0	05/11/95	ND	4
-18	SB-11 9.0	05/11/95	14	4
-22	SB-12 9.0	05/11/95	10	4
-26	SB-13 9.0	05/11/95	5	4
-29	SB-14 6.0	05/11/95	140	4
-31	SB-15 6.0	05/11/95	ND	4
-34	SB-16 6.0	05/11/95	120	4
-38	SB-17 6.0	05/12/95	ND	4
-39	SB-17 9.0	05/12/95	27	4
-41	METHOD BLANK	- - '	ND	. 4

ND: Not detected at or above limit of detection Information not available or not applicable

Results are reported on a wet-weight basis, as received.

TPH-O = Extractable petroleum hydrocarbons from C20 to C42 quantitated as motor oil.

Quality Assurance Results Summary

Matrix Spike/Matrix Spike Duplicate Results

for

Clayton Project No. 95051.87

Quality Assurance Results Summary for Clayton Project No. 95051.87

Page 1 of 3

Clayton Lab Number: Ext./Prep. Method:

9505223-LCS EPA3550

Date: Analyst:

GTL E950518-01W

SOIL

Std. Source: Sample Matrix/Media: 05/19/95

Analytical Method: Instrument ID: Date: Time: Analyst: Units:

EPA8015 02883 05/19/95 21:22 GUD MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	ND	20.0	17.5	88	17.5	88	88	51	147	0.0	30

Quality Assurance Results Summary for

Clayton Project No. 95051.87

Clayton Lab Number: Ext./Prep. Method: Date:

9505187-13A EPA3550 05/19/95

Analyst:

Std. Source:

GTL E950518-01W

Sample Matrix/Media: SOIL Analytical Method: Instrument ID: Date: Time:

EPA8015 02883 05/20/95 09:05 GUD MG/KG

Page 2 of 3

Analyst: Units:

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD	UCL (%RPD)
DIESEL	402	20.0	356	SOR	349	SOR	SOR	51	147	1.9	30

Quality Assurance Results Summary for Clayton Project No. 95051.87

Clayton Lab Number: Ext./Prep. Method: Date:

9505155-03A EPA 5030 05/23/95

WAS

Analyst:

Std. Source: V950313-01W

Sample Matrix/Media:

Analytical Method: Instrument ID: Date: Time: Analyst:

Units:

EPA8015 8020 05587 05/23/95 20:16 WAS MG/KG

SOIL

			· · · · · · · · · · · · · · · · · · ·	Matrix	MS Recovery	Matrix Spike	MSD Recovery	Average Recovery	LCL	UCL	RPD	UCL
Analyte		Sample Result	Spike Level	Spike Result	(%)	Duplicate Result		(% R)	(% R)	(% R)	(%)	(%RPD)
BENZENE	(PID)	ND	0.0437	0.0341	78	0.0361	83	68	53	140	5.7	28
ETHYLBENZENE	(PID)	ND	0.0292	0.0263	90	0.0297	102	96	56	134	12	25
GASOLINE	(FID)	ND	2.50	1.94	78	2.06	82	80	41	164	6.0	37
TOLUENE	(PID)	ND	0.152	0.119	78	0.128	84	81	60	139	7.3	22
TOTAL XYLENE	(PID)	ND	0.178	0.159	89	0.181	102	96	61	12 9	13	26

Clayton CONCLITANTS

REQUEST FOR LABORATORY **ANALYTICAL SERVICES**

For Olivida a May Only Done	
For Clayton Use Only Page L of	
Project No. pg 1-4 / pg 5	
Batch No Spirit 9505187950519	14
Ind. Code W/P.	
Date Logged In 5/16/45 By 345	
, Client Job No. / 0マフロー0/	
Cakland	
sheenholz Dept.	

CONSULTAINIS									Ind. C	ode		1	W/F	5 <u>. </u>	
Alisto Eng.	Proj #	10-	270-0	1					Date L	.ogged		169			
O Name Bridy Nagle Tit	Project	Mona	10	Purch	ase Ord	ier No.				, CI	ient Jo	b No.	1027	0-0	7
Mailing Address 1575 Treat Blod #3 City, State, Zip Walnut Creek C		ept.		Щ	Nam Com Adda City,	10	22	Fo (Cik	one					
Mailing Address 1575 Treat Blvd #	201,			[윤유	O Com	pany	Dos	, 5	choe		2			Dept	•
E O City, State, Zip Walnut Creek C	City State Zip Walnut Creek CA 7459B						3 3 8	We	Ter E	stree	7				
L L Telephone No. 5/0 27> /650 (Telelax N	0. 510 2	95 18	23		City,	State,	Zip	Ont	2/50			, 	·		
Date Results Req.: Rush Charges Authorized? Phone Yes No	F 1	4 - 1 1 - 54	s are: : applicable)		(Enter	an 'X' i	n the	box bel	ANAL ow to inc	YSIS R	EQUE:	Enter a	'P' if Pre	eserva	tive added. *)
Special Instructions: (method, limit of detection, etc.) TEAH = Total extractable petroleum hydroca W/silica gel cleans to quantity diesel (Explanation of Preservative: motor oil (C20-42)	10000 + 1	Drinki Collect		per of Containers	<i>\</i>								//	//	46187
CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/	AIR VOLUME (specify units)		No.			<u> </u>							FOR LAB USE ONLY
SB-7 3.0	5-11-55	Soil			Χ		Χ						+	011	,
SB-7 6.0											<u> </u>			02	
SB-7 9.0					X		X					_		03	
53-7 140													 	04	
50-8 3.0				Li	X		X						+	05	
SB-8 6.0												_		DG	
55-8 9.0				<u> </u>	X		X						-	07	
5B-8 HO							<u>, </u>						1	08	
SB-9 3.0					X		X						1	19	
56-9 6.0	A	V						,						<u>jō Y</u>	<u> </u>
Collected by: Chris Re	inhein	~0((print)	Colle	ector's S	Signatu	ire:			2					
CHAIN Relinquished by:	lanning .	Date/Time 5/15/95	9 1730	Rece	ived by	: Len		Her	ell				Date/T		- 17.3¢
CUSTODY Relinquished by Lyn Muschell Datestine (1826)					eived at	Lab by	r:[/a	rolx	lamm				Date/T		62gm
Method of Shipment: (F.C. Courser					ple Con	dition (Jpon l	Receipt	:] Accer	of Sple		☐ Oth	ér (exp	olain) ′
Authorized by: (Client Signature Must Accompany F	D	ate				-		-				-			
Please return completed form and samples to one of the	e Clayton Envi	ironmental	Consultants, In	c. labs	listed b	elow:						DISTE	RIBUTIO	——— N:	

22345 Roethel Drive Raritan Center Novi, MI 48375

(810) 344-1770

160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040

400 Chastain Center Blvd., N.W. Suite 490

Kennesaw, GA 30144 (404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657

WHITE - Clayton Laboratory YELLOW - Clayton Accounting - Client Retains PINK

Clayton ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY **ANALYTICAL SERVICES**

				•
For Clayton Use O	nly Page_	<u></u>	ol	
Project No.	PS	1-4	, pa	5
Batch No.	9505	187	9505	124
Ind. Code	1	W.P.		
Date Logged in	16/45	By /	ク	
Client	lob No. 10	-750-0	1	

									. 0000				
Alisto Eng Proj#	10-27	10-6						Dat	e Logg	ed In	5/16/9:	5 By ///	· · · · · · · · · · · · · · · · · · ·
Alisto Eng Proj#	le Proj.	Mana	er	Purch	ase Ord	ier No.				Client	iob No.	10-70-01	
Company Alisto Fucineering	ID.	ept.		Ш	Nam	جم 19	0.+0	t Oa	It a	nd			
Mailing Address 1575 Treat RIVE	Suite	201		1 <u>9</u> 💆	Company Dan Schoenhile Dept.							ot.	
City, State, Zip Walnut Creek	A SYS	28]₩ ×	Add	ress c	30 L	vale	اکير	ree			
Telephone No. 5/0 29 5 1050 Telefax I	Company Alisto Engineering Dept. Mailing Address 1575 Treat Blod Stude 201 City, State, Zip Walnut Creek CA 54578 Telephone No. 5/0 29 5 1850 Telefax No. 5/0 275 1823						City, State, Zip Oakland, CA						
Date Results Req.: Rush Charges Authorized? Phone / Fax Results Samples are:													
Yes No L	L	(check i	f applicable)	Containers	(Enter	an 'X' ir	, ,	pelow to	indica	re tedne	st; Enter a	a r ii rieserv	alive added.
Special Instructions: (method, limit of defection, etc.) TEPH= Total extractable petroleum hydrilica so cleanly to grantly diese (C- Explanation of Preservative: 900/ (C20-42) using	1	Drink	ing Water	nta	1	1		Y / .	/ ,	/ /		///	/ /1
TEME 10/21 PXNACTABLE PENOLUM MYA	LO CALDON)	☐ Collec	cted in the		•	\(\frac{1}{2}\)					//	' / /	/18/
L'Explanation of Preservative. Grantity diesel (C-	10-1014	State	of New York	ō	}	[G ⁰]	XXX	\ /		//			1051
motor oil (C20-42/Using	5/A 8015	ļ		₹ .		X .J.	XXY	/ /		′ /		/	FOR LAB
CLIENT SAMPLE IDENTIFICATION	Į DATE	[MATRIX/	AIR VOLUME	Number	18	<i>s</i> }/}	_X\\				/ /		USE ONLY
	SAMPLED		(specify units)	15		Y ' /	 			/ /			A
SB-9 910	5-11-85	Soil		 	X		X			 		+ + - - -	/ t
5B-9 140				1	<u> </u>				1			12	
50-10 3.0				(X		<u> </u>		<u> </u>			13	
SB-10 6.0									<u> </u>			14	
SB-10 9.0				1	χ		X					15	
SB-11 300				1								16	
53-11 6.0	 	 		11								17	
SB-11 9.0	 			1	V		X					18	
SB-11 1400	1-1-	1 7		11	 ``							19	,
5B-12 30	 	 		1					<u> </u>			20	/
		<u> </u>	(n===4)	Call	ector's S	LL Signatus	<u>~~~~</u>	5	<u> </u>	<u>. </u>		1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	
Collected by: Chris Kegn	ecmer		(print)	↓					<u>` </u>			Data/Time	3 –
CHAIN Relinquished by:	<u> </u>	S/IS/95	@173¢	Rece	eived by	fler	MICK	ell,				Date/Time 5//5/95	= 173¢
CUSTODY Relinquished by: In 11 Table Date Line @ 1820					eived at	Lab by	: Cars					Date/Time/9	5 6:2001
Method of Shipment: CEC Courill					ple Con	dition U	pon Rece	eipt:	□ Ac	ceptable	et	Other (e)	(plain)
Authorized by: Date					-	-				-			
(Client Signature Must Accompany		ale											
Please return completed form and samples to one of the		ironmental	Consultants, Inc	c. labs	listed b	elow:						DIDLITION	
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22345 Roethel Drive Raritan Center Novi, MI 48375 (810) 344-1770

160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040

400 Chastain Center Blvd., N.W. Suite 490

Kennesaw, GA 30144 (404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657

- Clayton Laboratory WHITE YELLOW -Clayton Accounting - Client Retains PINK

Clayton ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY **ANALYTICAL SERVICES**

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Special Instructions (method, limit of detection, etc.) TEH = Total Metholum Harocarbons w/silica gel clean to the grantific diesel (C10-20) & Collected in the State of New York Material Material Collected in the State of New York Date Material Alband Material Collected in the State of New York Date Material Alband Material Material Alband Material Material Alband Material Mater						(Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added.										18/
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	Sample Condition Upon Receipt: Acceptable Other (explain)															
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Authorized by:						-		-								
(Client Signature Must Accompa	ny Request)		. –													
Please return completed form and samples to one of	c. labs	c. labs listed below:														

(404) 499-7500

Kennesaw, GA 30144

22345 Roethel Drive Raritan Center Novi, MI 48375 (810) 344-1770

160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040

400 Chastain Center Blvd., N.W. Suite 490

1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657

WHITE Clayton Laboratory YELLOW - Clayton Accounting Client Retains PINK

Clayton CONCLITANTS

REQUEST FOR LABORATORY **ANALYTICAL SERVICES**

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Special Instructions: (method, limit of detection, etc.) TENT TOTAL Extractable Petroleum By di Explanation of Preservative: Emotor oil (C22-12) with ElA	esel(c10-20)	Drink Collect	ing Water cted in the of New York	per of Containers								is 181
CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MEDIA	AIR VOLUME (specify units)								<i></i>	FOR LAB JSE ONLY
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Authorized by: Date				<u> </u>						~		
(Client Signature Must Accompany F												
Please return completed form and samples to one of the	e Clayton Envi	ronmental	Consultants, Inc	c. labs	listed be	low:				DICTO	OIDI ITION:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	DISTRIBUTION:											

Novi, MI 48375 (810) 344-1770

160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040

Suite 490 Kennesaw, GA 30144

(404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657

WHITE - Clayton Laboratory YELLOW - Clayton Accounting PINK - Client Retains

Western Operations

1252 Quarry Lane P.O. Box 9019 Pleasanton, CA 94566 (510) 426-2600 Fax (510) 426-0106



September 14, 1995

Mr. Dale Swain ALISTO ENGINEERING GROUP 1575 Treat Blvd., Suite 201 Walnut Creek, CA 94598

Client Ref.: 10-270
Clayton Project No.: 95083.65

Dear Mr. Swain:

Attached is our analytical laboratory report for the samples received on August 30, 1995. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

Please note that any unused portion of the samples will be discarded after October 14, 1995, unless you have requested otherwise.

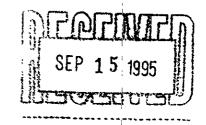
We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Harriotte A. Hurley, CIH
Director, Laboratory Services
San Francisco Regional Office

HAH/tjb

Attachments



Page 2 of 12

Analytical Results

for

Alisto Engineering Group Client Reference: 10-270 Clayton Project No. 95083.65

Sample Identification: MW-4 10.0'

Lab Number:

9508365-02A

Sample Matrix/Media:

SOIL

Preparation Method: Method Reference:

EPA 5030

EPA 8015/8020

Date Sampled:

08/25/95 08/30/95

Date Received: Date Prepared:

08/30/95

Date Analyzed:

08/31/95

Analyst:

WGK

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene	71-43-2 100-41-4	ND ND	0.005

Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND	0.005 0.005 0.005 0.005 0.005
--	--	----------------------------	---

Surrogates

a,a,a-Trifluorotoluene 98-08-8 Recovery (%) 88

QC Limits (%) 50 - 150

ND: Not detected at or above limit of detection Information not available or not applicable

Page 3 of 12

Analytical Results for

Alisto Engineering Group Client Reference: 10-270 Clayton Project No. 95083.65

Sample Identification: MW-5 6.5'

9508365-04A

Lab Number:

SOIL

Sample Matrix/Media: Preparation Method:

EPA 5030

Method Reference:

EPA 8015/8020

Date Sampled: Date Received:

08/25/95 08/30/95

Date Prepared:

08/30/95

Date Analyzed:

08/31/95

Analyst:

WGK

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND ND	0.005 0.005 0.005 0.005 0.005 0.3
Surrogates		Recovery (%)	OC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	88	50 - 150

ND: Not detected at or above limit of detection Information not available or not applicable

Page 4 of 12

Analytical Results for

Alisto Engineering Group Client Reference: 10-270

Clayton Project No. 95083.65

Sample Identification: MW-5 10.0' Lab Number:

9508365-05A

Sample Matrix/Media:

SOIL

Preparation Method: Method Reference:

EPA 5030

EPA 8015/8020

Date Sampled:

08/25/95 Date Received: 08/30/95

Date Prepared: Date Analyzed:

08/30/95 08/31/95

Analyst:

WGK

			' Method
-			Detection
_		Concentration	Limit
Analyte	CAS #	$(\mathtt{ug/L})$	(ug/L)

BTEX,	/Gasoline

			1
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	: 0.005
p,m-Xylenes	- -	ND	0.005
Gasoline		ND	0.3

Surrogates		Recovery (%)	OC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	56	50 - 150

Not detected at or above limit of detection Information not available or not applicable

of 12 Page 5

Analytical Results for

Alisto Engineering Group Client Reference: 10-270 Clayton Project No. 95083.65

Sample Identification: MW-6 10.0' Lab Number:

Date Sampled: 08/25/95

Sample Matrix/Media:

9508365-08A SOIL

Date Received: 08/30/95 Date Prepared: 08/30/95 Date Analyzed: 08/31/95

Preparation Method:

EPA 5030

EPA 8015/8020 Method Reference: Analyst:

WGK

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes		ND	0.005
Gasoline		ND	0.3
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	76	50 - 150

Not detected at or above limit of detection ND: Information not available or not applicable

Page 6 of 12

Analytical Results

for

Alisto Engineering Group Client Reference: 10-270 Clayton Project No. 95083.65

Sample Identification: MW-7 10.0' ⊾ab Number:

9508365-10A

Date Sampled: Date Received: Date Prepared: Date Analyzed:

08/25/95 08/30/95 08/30/95

ample Matrix/Media: Preparation Method: EPA 5030 Method Reference: EPA 8015/

SOIL

Analyst:

08/31/95 WGK.

Method Reference:

EPA 8015/8020

		•	[
nalyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
TEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p.m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND ND	0.005 0.005 0.005 0.005 0.005 0.3
Surrogates a,a,a-Trifluorotoluene	98-08-8	Recovery (名) 84	OC Limits (%) 50 - 150

Not detected at or above limit of detection Information not available or not applicable

Page 7 of 12

Analytical Results for

Alisto Engineering Group Client Reference: 10-270 Clayton Project No. 95083.65

Sample Identification: MW-8 6.5'

Lab Number:

9508365-13A

Sample Matrix/Media:

SOIL

Preparation Method: Method Reference:

EPA 5030

EPA 8015/8020

Date Sampled:

08/25/95 08/30/95 Date Received;

08/30/95 Date Prepared; 09/01/95 Date Analyzed:

WGK Analyst:

Mechod Reference.	H111 00137 0020		, 111ca. 1 to 0 t	,, 42-1
Analyte		CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline				
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline		71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND 47a	0.03 2 0.1 0.2 0.2
Surrogates			Recovery (%)	OC Limits (%)
a,a,a-Trifluorotolu	ene	98-08-8	78	50 - 150

ND: Not detected at or above limit of detection

Information not available or not applicable

Results are reported on a wet-weight basis, as received.

Note: Detection limits increased due to dilution necessary for quantitation.

a Purgeable hydrocarbons quantitated as gasoline may be due to heavier petroleum product.

Page 8 of 12

Analytical Results for

Alisto Engineering Group Client Reference: 10-270 Clayton Project No. 95083.65

Sample Identification: MW-8 10.01'

Date Sampled:

08/25/95

Lab Number:

<u>Surrogates</u>

9508365-14A

Date Received: Date Prepared:

08/30/95 08/30/95

Sample Matrix/Media: Preparation Method:

SOIL EPA 5030

Date Analyzed:

09/01/95

QC Limits (%)

50 - 150

Method Reference:

EPA 8015/8020

Analyst:

Recovery (%)

72

WCK

Method Reference:	EPA 8015/8020		Analyst:	WGK
Analyte		CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline				
Benzene Ethylbenzene Toluene		71-43-2 100-41-4 108-88-3	ND ND ND	0.03 1 0.1
o-Xylene p,m-Xylenes Gasoline		95-47-6 	ND ND 27 a	0.3 0.3 2

98-08-8

ND: Not detected at or above limit of detection --: Information not available or not applicable

a, a, a-Trifluorotoluene

Results are reported on a wet-weight basis, as received.

Note: Detection limits increased due to dilution necessary for quantitation.

Purgeable hydrocarbons quantitated as gasoline may be due to heavier petroleum product.

of 12 Page 9

Analytical Results for

Alisto Engineering Group Client Reference: 10-270 Clayton Project No. 95083.65

Sample Identification: METHOD BLANK

Date Sampled:

Lab Number:

9508365-15A

Date Received: _ _

Sample Matrix/Media:

SOIL

Date Prepared: Date Analyzed:

08/30/95 08/31/95

Preparation Method: EPA 5030 Method Reference: EPA 8015/8020

Analyst:

WGK

Analyte	CAS #	Concentration CAS # (ug/L)			
BTEX/Gasoline					
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND	0.005 0.005 0.005 0.005 0.005		
Surrogates		Recovery (%)	QC Limits (%)		
a,a,a-Trifluorotoluene	98-08-8	112	50 - 150		

Not detected at or above limit of detection ND: Information not available or not applicable

Page: 10 of 12

Analytical Results for

Alisto Engineering Group Client Reference: 10-270 Clayton Project No. 95083.65

Sample Identification: See Below

08/30/95 Date Received:

Lab Number:

9508365

Date Extracted: 08/31/95

Sample Matrix/Media:

SOIL

Date Analyzed: 09/08/95

Extraction Method:

EPA 3550

Method Reference: EPA 8015 (Modified)

Lab Number	Sample Identification	Date Sampled	Kerosene (mg/kg)	Method Detection Limit (mg/kg)
-02	MW-4 10.0'	08/25/95	ND	1
-04	MW-5 6.5'	08/25/95	ND	: 1
- 05	MW-5 10.0'	08/25/95	ND	1
-08	MW-6 10.0'	08/25/95	ND	. 1
-10	MW-7 10.0'	08/25/95	ND	1
- 1 3	MW-8 6.5'	08/25/95	ND	: 1
-14	MW-8 10.01'	08/25/95	ND	$\overline{\mathtt{1}}$
-15	METHOD BLANK	'	ND	1

Not detected at or above limit of detection Information not available or not applicable

Page 11 of 12

Analytical Results for

Alisto Engineering Group Client Reference: 10-270 Clayton Project No. 95083.65

Sample Identification: See Below

Date Received: 08/30/95

Lab Number:

9508365

Date Extracted: 08/31/95

Sample Matrix/Media:

SOIL

Date Analyzed: 09/08/95

Extraction Method:

EPA 3550

Method Reference:

EPA 8015 (Modified)

Lab Number	Sample Identification	Date Sampled	TPH-D (mg/kg)	Method Detectior Limit (mg/kg)
-02	MW-4 10.0'	08/25/95	ND	1
-04	MW-5 6.5'	08/25/95	ND	1
-05	MW-5 10.0'	08/25/95	5	1
-08	MW-6 10.0'	08/25/95	ND	1
-10	MW-7 10.0'	08/25/95	ND	1
·13	MW-8 6.5'	08/25/95	1300	1
14	MW-8 10.01'	08/25/95	1800	1
15	METHOD BLANK		ND	1

ND: Not detected at or above limit of detection --: Information not available or not applicable

Results are reported on a wet-weight basis, as received.

TPH-D = Extractable petroleum hydrocarbons from C10 to C20 quantitated as diesel.

Page 12 of 12

Analytical Results for

Alisto Engineering Group Client Reference: 10-270 Clayton Project No. 95083.65

Sample Identification: See Below Lab Number:

Date Received: 08/30/95

Sample Matrix/Media:

9508365 SOIL

Date Extracted: 08/31/95 Date Analyzed: 09/08/95

Extraction Method: Method Reference:

EPA 3550

EPA 8015 (Modified)

Lab Number	Sample Identification	Date Sampled	TPH-O (mg/kg)	Method Detection Limit (mg/kg)
-02	MW-4 10.0'	08/25/95	ND	4
-04	MW-5 6.5'	08/25/95	ND	4
-05	MW-5 10.0'	08/25/95	31	4
-08	MW-6 10.0'	08/25/95	ND	4
-10	MW-7 10.0'	08/25/95	ND	4
-13	MW-8 6.5'	08/25/95	1700	4
-14	MW-8 10.01'	08/25/95	2600	4
-15	METHOD BLANK		ND	4

ND: Not detected at or above limit of detection

--: Information not available or not applicable

Results are reported on a wet-weight basis, as received.

TPH-O = Extractable petroleum hydrocarbons from C20 to C42 quantitated as motor oil.



REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only Page_	01
Project No.	
Batch No. 95083	65
Ind. Code	W.P.
Date Logged In 8/350	By DN Se

					Date .	_0 <u>9900 III</u>	1521,		$U \sim IU$	<u> </u>
O Name Pale Swain Title		Purch	ase Order N	20186	7	Clie	nt Job N	19.10-	270	
Company ALISTO ENGINEER WG Der	ot.	m	Name Company Address City, Stat	+ Exct	c)	ack	aro	7		
Company ALISTS ENGINEER ING Dep Mailing Address 1575 Treat Stuck # 200 City, State, Zip (A) August (CER)]일음(Company						Dept.	
]8 ≥ '	Address							
	5 1823	ļ <u> </u>	City, Stat	e, Zip						
Date Results Req.: Rush Charges Authorized? Phone / Fax Results Yes No	Samples are: (check if applicable)				JAMA ni of wole	YSIS REC	QUESTE uest; Er	D iter a 'P' if P	reservative ad	ded.)
Special Instructions: (method, limit of detection, etc.)	Drinking Water	Containers	· 	14/0			//		16	
* Explanation of Preservative:	Collected in the State of New York	क	\ \ \ \			//		//,	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
CLIENT SAMPLE IDENTIFICATION SAMPLED	MATRIX/ AIR VOLUME MEDIA (specify units)		[\$ ^x /\$	Z /					FOR USE C	ONLY
MW-4 6.5 8-25-95	Soil 2x/a PC							X	OI.	<u> {}</u>
- MW-4 10.0'		1	$\times \times$				\perp		C_{-}	
MW-4 16,5'			·	1 1	1		1	\times	03	
- MW-5 (0.51			XX						CY	
- MW-5 10.0'		j	メメ						C5	
- MW-5 18,51	2x455C							X	06	
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- MW-6 10.0		1	$\times \times$	1					08	
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Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive Novi, MI 48375 (313) 344-1770 Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040

400 Chastain Center Blvd., N.W. Suite 490

Kennesaw, GA 30144 (404) 499-7500 1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657 DISTRIBUTION:

2/92

WHITE - Clayton Laboratory
YELLOW - Clayton Accounting

PINK - Client Retains



REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only	Page of
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Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive Novi, MI 48375 (313) 344-1770 Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040

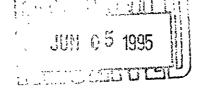
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Kennesaw, GA 30144 (404) 499-7500 1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657 DISTRIBUTION:

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LABORATORY REPORTS OF GROUNDWATER SAMPLES	,
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1252 Quarry Lane P.O. Box 9019 Pleasanton, CA 94566 (510) 426-2600 Fax (510) 426-0106



Clayton ENVIRONMENTAL CONSULTANTS

May 31, 1995

Mr. Brady Nagle ALISTO ENGINEERING GROUP 1575 Treat Blvd., Suite 201 Walnut Creek, CA 94588

> Client Ref.: 10-270-01 Clayton Project No.: 950\$1.94

Dear Mr. Nagle:

Attached is our analytical laboratory report for the samples received on May 15, 1995. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

Please note that any unused portion of the samples will be discarded after June 30, 1995, unless you have requested otherwise.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Harriotte A. Hurley, CIH Director, Laboratory Services San Francisco Regional Office

HAH/tjb

Attachments

Page 2 of 13

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.94

Sample Identification: SB-7W

Lab Number:

9505194-01A

Sample Matrix/Media:

<u>Surrogates</u>

WATER

Preparation Method: Method Reference:

EPA 5030

EPA 8015/8020

Date Sampled:

05/11/95 05/15/95

Date Received: Date Prepared:

Recovery (%)

126

05/15/95

OC Limits (%)

50 - 150

Date Analyzed:

05/23/95

Analyst:

WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	6.7 ND 0.3 ND ND 200	0.4 0.3 0.3 0.4 0.4

98-08-8

D: Not detected at or above limit of detection Information not available or not applicable

a, a, a-Trifluorotoluene

Purgeable hydrocarbons quantitated as gasoline do not match typical gasoline pattern.

Page 3 of 13

Analytical Results

for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.94

Sample Identification: SB-8W

05/11/95 Date Sampled:

Lab Number:

9505194-02A

05/15/95

Sample Matrix/Media:

WATER

Date Received: Date Prepared: 05/23/95

Preparation Method:

EPA 5030

Date Analyzed:

05/23/95

Method Reference:

EPA 8015/8020

Analyst:

WAS

***********	 - ·	
 	7.7	Mat

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND 7300	4 3 3 4 4 500
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	80	50 - 150

Not detected at or above limit of detection ND: Information not available or not applicable

Detection limit increased due to presence of heavier hydrocarbons.

a Sample appears to be weathered gasoline.

Page 4 of 13

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.94

ample Identification: SB-9W

Lab Number:

reparation Method: Method Reference:

Sample Matrix/Media:

9505194-03A

WATER EPA 5030

EPA 8015/8020

Date Sampled:

05/12/95 Date Received: 05/15/95 Date Prepared: Date Analyzed:

Analyst.

05/23/95 05/23/95

MAC

	1111 0013/0020		Analyst:	WA5
analyte		CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline				
Benzene		71-43-2	ND	4
_ Ethylbenzene		100-41-4	ND	, , 3
Toluene		108-88-3	ND	; 3
■ o-Xylene		95-47-6	ND	4
p,m-Xylenes			ND	$\overline{4}$
Gasoline			29000	500
<u>Surrogates</u>			Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluen	e	98-08-8	86	50 - 150
				T.

Not detected at or above limit of detection Information not available or not applicable

etection limit increased due to presence of heavier hydrocarbons. Sample appears to be weathered gasoline.

Page 5 of 13

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.94

Sample Identification: SB-10W

05/12/95

Lab Number:

9505194-04A WATER

05/15/95

Sample Matrix/Media: Preparation Method:

Date Received: Date Prepared: 05/23/95 05/23/95

EPA 5030

Date Analyzed:

Date Sampled:

Method Reference:

EPA 8015/8020

Analyst:

WAS

		2	***************************************
Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND 1400	0.4 0.3 0.3 0.4 0.4
Surrogates		Recovery (%)	OC Limits (%)
a,a,a-Trifluorotolue	ne 98-08-8	79	50 - 150

ND: Not detected at or above limit of detection Information not available or not applicable

Sample appears to be weathered gasoline.

Page:6 of 13

Analytical Results

for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.94

Sample Identification: SB-11W

Date Sampled:

05/11/95

Lab Number:

o-Xylene

Gasoline

p,m-Xylenes

9505194-05A

Date Received: 05/15/95

ample Matrix/Media: WATER reparation Method: EPA 5030

Date Prepared: Date Analyzed:

05/23/95

0.4

0.4

50

05/23/95

Method Reference:

EPA 8015/8020

Analyst:

ND

ND

970

WAS

nalyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
TEX/Gasoline			
Benzene Ethylbenzene Toluene	71-43-2 100-41-4 108-88-3	0.5 ND ND	0.4 0.3 0.3

95-47-6

- -

Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	105	50 - 150

Not detected at or above limit of detection Information not available or not applicable

Sample appears to be weathered gasoline.

of 13 Page 7

Analytical Results

for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.94

Sample Identification: SB-12W

05/11/95

Lab Number:

9505194-06A

05/15/95

Sample Matrix/Media:

WATER

Date Received: 05/23/95 Date Prepared: Date Analyzed: 05/23/95

Preparation Method: Method Reference:

EPA 5030

Analyst:

Date Sampled:

EPA 8015/8020

WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND	0.4 0.3 0.3 0.4 0.4 50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	94	50 - 150

Not detected at or above limit of detection ND: Information not available or not applicable --:

of 13 Page 8

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.94

Sample Identification: SB-13W

9505194-07A

Date Sampled: 05/12/95 Date Received: 05/15/95

ample Matrix/Media: reparation Method: WATER EPA 5030 Date Prepared: 05/23/95 Date Analyzed: 05/23/95

Method Reference:

Lab Number:

EPA 8015/8020

midityse. Was	Analyst	:	WAS
---------------	---------	---	-----

nalyte	CAS	#	Concentration (ug/L)	Method Detection Limit (ug/L)
--------	-----	---	-------------------------	--

TEX	/Gasoline

Benzene	71-43-2	25	0.4
Ethylbenzene	100-41-4	1.2	0.3
Toluene	108-88-3	1.3	0.3
o-Xylene	95-47-6	0.4	0.4
p,m-Xylenes		4.0	0.4
Gasoline	- -	130	50

OC Limits (%) Recovery (%)

a,a,a-Trifluorotoluene

98-08-8

100

50 - 150

Not detected at or above limit of detection Information not available or not applicable

Page 9 of 13

Analytical Results

for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.94

Sample Identification: SB-17W

Date Sampled:

05/12/95

Lab Number:

9505194-08A

Date Received:

05/15/95

Sample Matrix/Media:

WATER

Date Prepared:

05/23/95

Preparation Method:

EPA 5030

Date Analyzed:

05/23/95

Method Reference:

Analyst:

WAS

EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND 30 ND ND 50 140000	40 30 30 40 40 5000
Surrogates	•	Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	91	50 - 150

Not detected at or above limit of detection ND: Information not available or not applicable

Detection limit increased due to presence of heavier hydrocarbons. a Sample appears to be weathered gasoline.

Page 10 of 13

Analytical Results

for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.94

sample	Identification:	QC-1
Lab Nun	nber:	95051

9505194-10A

Date Sampled: 05/12/95 Date Received: 05/15/95 Date Prepared: 05/23/95

ample Matrix/Media: reparation Method: EPA 5030
Method Reference: EPA 8015/8020

WATER

Date Analyzed: Analyst: WAS

05/23/95

Method Reference:

method Reference:	EPA 8015/8020		Analyst:	WAS
analyte		CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
TEX/Gasoline				
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline		71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND	0.4 0.3 0.3 0.4 0.4 50
<u>Surrogates</u>			Recovery (%)	OC Limits (%)
a,a,a-Trifluorotolue	ne	98-08-8	91	50 - 150
				The state of the s

Not detected at or above limit of detection ND: Information not available or not applicable

Page 11 of 13

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.94

Sample Identification: METHOD BLANK

Date Sampled:

Lab Number:

9505194-11A

Date Received: Date Prepared:

05/23/95

Sample Matrix/Media: Preparation Method:

WATER

Date Analyzed:

05/23/95

EPA 5030

Analyst:

WAS

Method Reference:

EPA 8015/8020

Method Detection Concentration Limit CAS # (ug/L) Analyte (ug/L)

BTEX	/Gasc	line

Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes		ND	0.4
Gasoline		ND	50

Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	96	50 - 150

Not detected at or above limit of detection ND:

Information not available or not applicable

Date Received:

Page 12 of 13

05/15/95

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.94

ample Identification: See Below

Lab Number:

9505194

ample Matrix/Media: WATER

Sample Identification	Date Sampled	Fingerprint (%)	Method Detection Limit (%)
SB-9W	05/12/95	*	
SB-16W	05/12/95	64% diesel #2	
METHOD BLANK		ND	; - -
			ľ
	Identification SB-9W SB-16W	Identification Sampled SB-9W 05/12/95 SB-16W 05/12/95	Identification Sampled (%) SB-9W 05/12/95 * SB-16W 05/12/95 64% diesel #2

D: Not detected at or above limit of detection-: Information not available or not applicable

* Sample SB-9W was a mixture of weathered gas, diesel, and oil. Percent levels were not present n the sample. Refer to the results reported for TPH-D and gasoline.

Page 13 of 13

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01 Clayton Project No. 95051.94

Sample Identification: See Below

05/15/95 Date Received:

Lab Number:

9505194

Date Extracted: 05/18/95

Sample Matrix/Media:

WATER

Date Analyzed: 05/24/95

Extraction Method:

EPA 3510

Method Reference:

EPA 8015 (Modified)

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)	Method Detection Limit (ug/L)
-01	SB-7W	05/11/95	ND	50
-02	SB-8W	05/11/95	3400	50
-03	SB-9W	05/12/95	18000	50
-04	SB-10W	05/12/95	7400	50
-05	SB-11W	05/11/95	1400	50
-06	SB-12W	05/11/95	ND	50
-07	SB-13W	05/12/95	ND	50
-08	SB-17W	05/12/95	43000	50
-09	SB-16W	05/12/95	*	50
-11	METHOD BLANK		ND	50

ND: Not detected at or above limit of detection --: Information not available or not applicable

TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.

Note: Samples were extracted with hexane followed by a silica gel cleanup.

^{*} Percent levels of diesel #2 present in sample SB-16W. Refer to the results reported for % fingerprint.

Clayton ENVIRONMENTAL

REQUEST FOR LABORATORY

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For Clayton Use Only	Page	> of _	<u>フ</u>
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	Alisto Eng Proj. # 1	0-210-0) (5/8/95 By Od
	P Name Brady Nagle Titl	· Proj Mgr.		Purch	hase Order No.		ob No. 10-270-01
i	Mailing Address 1575 Treat Rud	Dept.		\ \ \ \	Name roct	of Calcland	
	City, State, Zip walnut creek	Ste 201 CA 94598		Ho	Company Onn Address 550 City, State, Zip		Dept.
	Telephone No. 510 225 1650 Telefax N	0 5/0 295 18	37.3	°≥	City, State, Zip	valy speet	A
	Date Results Req.: Rush Charges Authorized? Phone	Fax Results Sample				ANALYSIS REQUE	STED
	Yes No	(check	if applicable)	Ders	(Enter an 'X' in the box	below to indicate reques	t; Enter a 'P' if Preservative added. *)
	Special Instructions: (method, limit of detection, etc.) TEPH-TOTAL Perform the december (ext.) Silica get cleans to grantify Dietol (C10-2 Explanation of Preservative: 0:1 (C20-42) using the HCL	Drin □	king Water	Containers	1 14 36	Refuse to indicate reques	
	Silica gel cleany to grantily Dieto (C10-2	o) + Motor Colle	ected in the		647		//////
<i>.</i> .	Explanation of Preservative: 0:1 (C20-42) usike	State	e of New York	er of		(
n	['	DATE MATRIX	/ AIR VOLUME	Number	TO STATE OF THE ST	Charles /	9 FOR LAB
	CLIENT SAMPLE IDENTIFICATION	SAMPLED MEDIA	(specify units)	ž	/ X 49/X / \\	Q'/ / / /	USE ONLY
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	SB-8W	5-11-95	16x/2x40ml	3	Xp Xp		02 V
	SR - 9W	5-1295	168/3×40m/	4	XXX	9	03 A-D
	SB-10W	5-1295	16/2x40ml	3	x N X A		04 A-L
	5B-11W	5-11-85	1Lge/2x40ml	3	× d Xb		05
	SB-RW	5-11-95	14-gl/2x40ml	3	X d XD		06
	53-BW	5-1295	16 /JA40ml	3	X G X S		07
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•	Please return completed form and samples to one of the	Clayton Environmental	Consultants, Inc	. labs	listed below:		DISTRIBUTION:
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Novi, MI 48375 (810) 344-1770

160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040

400 Chastain Center Bivd., N.W. Suite 490

Kennesaw, GA 30144 (404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657

WHITE - Clayton Laboratory YELLOW - Clayton Accounting - Client Retains

PINK

1252 Quarry Lane P.O. Box 9019 Pleasanton, CA 94566 (510) 426-2600 Fax (510) 426-0106



September 22, 1995

Mr. Brady Nagle ALISTO ENGINEERING GROUP 1575 Treat Blvd., Suite 201 Walnut Creek, CA 94598

> Client Ref.: 10-270-01-004 Clayton Project No.: 95091.08

Dear Mr. Nagle:

Attached is our analytical laboratory report for the samples received on September 8, 1995. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

Please note that any unused portion of the samples will be discarded after October 22, 1995, unless you have requested otherwise.

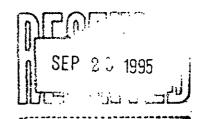
We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Harriotte A. Hurley, CIH Director, Laboratory Services San Francisco Regional Office

HAH/tjb

Attachments



Page 2 of 10

Analytical Results

for

Alisto Engineering Group

Client Reference: 10-270-01-004 Clayton Project No. 95091.08

Sample Identification: MW-4

9509108-01A

Date Sampled: 09/11/95

Sample Matrix/Media:

WATER

Date Received: 09/12/95 Date Prepared: 09/20/95

Preparation Method:

EPA 5030

Date Analyzed:

09/20/95

Lab Number:

Method Reference:	EPA 8015/8020		Analyst:	NAI	J
analyte		CAS #	Concentration (ug/L)	Ι	Method Detection Limit (ug/L)
TEX/Gasoline					
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline		71-43-2 100-41-4 108-88-3 95-47-6	23 ND ND ND ND 150 a		0.4 0.3 0.3 0.4 0.4 50
<u>Surrogates</u>			Recovery (%)	OC Li	mits (%)
a,a,a-Trifluorotoluer	ne	98-08-8	83	50	- 150

Not detected at or above limit of detection Information not available or not applicable

Purgeable hydrocarbons quantitated as gasoline do not match typical gasoline pattern.

Page 3 of 10

Analytical Results for

Alisto Engineering Group

Client Reference: 10-270-01-004 Clayton Project No. 95091.08

Sample Identification: MW-5 Date Sampled: 09/11/95 Lab Number: 9509108-02A Date Received: 09/12/95 Sample Matrix/Media: WATER Date Prepared: 09/20/95 Preparation Method: EPA 5030 Date Analyzed: 09/20/95 Method Reference: EPA 8015/8020 Analyst: NAN

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	3.3 ND ND ND ND 90 a	0.4 0.3 0.3 0.4 0.4
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	84	50 - 150

ND: Not detected at or above limit of detection --: Information not available or not applicable

a Purgeable hydrocarbons quantitated as gasoline do not match typical gasoline pattern.

Page 4 of 10

Analytical Results

for

Alisto Engineering Group Client Reference: 10-270-01-004

Clayton Project No. 95091.08

ample Identification: MW-2

Sample Matrix/Media:

Preparation Method:

ab Number:

Gasoline

9509108-03A

WATER

EPA 5030

Date Sampled:

09/06/95

Date Received: Date Prepared: 09/08/95

Date Analyzed:

09/20/95 09/20/95

EPA 8015/8020		Analyst:	NAN
	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND	0.4 0.3 0.3 0.4
	EPA 8015/8020	CAS # 71-43-2 100-41-4 108-88-3	EPA 8015/8020 Analyst: Concentration (ug/L) 71-43-2 ND 100-41-4 ND 108-88-3 ND

<u>Surrogates</u>		Recovery (%)	OC Limits (왕)
a a a-Trifluorotoluoro	00 00 0		!

a,a,a-Trifluorotoluene

98-08-8

94

ND

50 - 150

0.4

50

ND: Not detected at or above limit of detection Information not available or not applicable

Page 5 of 10

Analytical Results for

Alisto Engineering Group

Client Reference: 10-270-01-004 Clayton Project No. 95091.08

Sample Identification: MW-7

Lab Number:

9509108-04A

Sample Matrix/Media: Preparation Method:

WATER

EPA 5030

Method Reference:

EPA 8015/8020

Date Sampled:

09/06/95 Date Received: 09/08/95 Date Prepared:

Date Analyzed:

09/20/95 09/20/95

Analvst: NAN

	1111 0013/0020	Allalyst:	IVAIV
Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND	0.4 0.3 0.3 0.4 0.4
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotolu	ene 98-08-8	99	50 - 150

ND: Not detected at or above limit of detection Information not available or not applicable --:

Page 6 of 10

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01-004

Clayton Project No. 95091.08

Sample Identification: QC-1

Lab Number:

9509108-05A

Sample Matrix/Media:

WATER

Preparation Method: Method Reference:

EPA 5030 EPA 8015/8020

Date Sampled:

09/06/95 Date Received:

Date Prepared:

09/08/95 09/20/95

Date Analyzed:

09/20/95

		NAN
CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
	-	
71-43-2	MD	0.4
100-41-4		0.3
108-88-3		0.3
95-47-6		0.4
	ND	0.4
	ND	50
	Recovery (%)	OC Limits (%)
98-08-8	90	50 - 150
	71-43-2 100-41-4 108-88-3 95-47-6	TAS # (ug/L) 71-43-2 ND 100-41-4 ND 108-88-3 ND 95-47-6 ND ND ND Recovery (%)

Not detected at or above limit of detection Information not available or not applicable

Page 7 of 10

Analytical Results for

Alisto Engineering Group Client Reference: 10-270-01-004

Clayton Project No. 95091.08

Sample Identification: QC-2 Lab Number:

Date Sampled:

09/06/95 09/08/95

Sample Matrix/Media:

9509108-06A WATER

Date Received: Date Prepared:

09/20/95

Preparation Method:

EPA 5030

Date Analyzed:

09/20/95

Method Reference:

Analyst:

EPA 8015/8020

NAN

				Method Detection
Analyte	CAS	#	Concentration (ug/L)	Limit (ug/L)

BTEX	/Gasol:	ine

Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes		ND	0.4
Gasoline	- -	ND	50

Surrogates	Recovery (%)	OC Limits (%)

a, a, a-Trifluorotoluene

98-08-8

90

50 - 150

ND: Not detected at or above limit of detection Information not available or not applicable

Analytical Resul for	ts	Page 8 of 10
Alisto Engineering G	roup	!
Client Reference: 10-2	70-01-004	
Clayton Project No.	95091.08	
METHOD BLANK	Date Sampled:	:!
9509108-07A	Date Received	i:
WATER	Date Prepared	i: 09/20/95
EPA 5030	Date Analyzed	d: 09/20/95
EPA 8015/8020	Analyst:	NAN

		-	
inalyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
TEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND	0.4 0.3 0.3 0.4 0.4 50
Surrogates		Recovery (%)	OC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	91	50 - 150
			1

Not detected at or above limit of detection ND: Information not available or not applicable

ample Identification: METHOD

ample Matrix/Media:

Preparation Method:

Method Reference:

ab Number:

Page 9 of 10

Analytical Results for

Alisto Engineering Group

Client Reference: 10-270-01-004 Clayton Project No. 95091.08

Sample Identification: See Below

Date Received: 09/08/95

Lab Number:

9509108 WATER

Date Extracted: 09/13/95

Sample Matrix/Media:

Date Analyzed:

09/21/95

Extraction Method:

EPA 3510

Method Reference:

EPA 8015 (Modified)

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)	Method Detection Limit (ug/L)
-01	MW-4	09/06/95	ND	200 a
-02	MW-5	09/06/95	ND	300 a
-03	MW-2	09/06/95	ND	60 a
-04	MW-7	09/06/95	ND	300 a
-07	METHOD BLANK	'	ND	50

ND: Not detected at or above limit of detection Information not available or not applicable

TPH-D = Extractable petroleum hydrocarbons from C10 to C20 quantitated as diesel. a Detection limit increased due to presence of heavier hydrocarbons.

Page 10 of 10

Analytical Results for

Alisto Engineering Group

Client Reference: 10-270-01-004 Clayton Project No. 95091.08

Sample Identification: See Below

09/08/95 Date Received:

Lab Number:

9509108

Date Extracted: 09/13/95

Bample Matrix/Media:

WATER

Date Analyzed: 09/21/95

Preparation Method: Method Reference:

EPA 3510

EPA 8015 (Modified)

Lab Number	Sample Identification	Date Sampled	TPH-O (ug/L)	Method Detection Limit (ug/L)
-01	MW - 4	09/06/95	500	200
⊢ 02	MW - 5	09/06/95	2500	200
-03	MW-2	09/06/95	400	200
-02 -03 -04	MW - 7	09/06/95	800	200
-07	METHOD BLANK		ND	200

Not detected at or above limit of detection Information not available or not applicable

FPH-O = Extractable petroleum hydrocarbons from C20 to C42 quantitated as motor oil.



Quality Assurance Results Summary

Matrix Spike/Matrix Spike Duplicate Results

for

Clayton Project No. 95091.08

Clayton Project No. 95091.08

Clayton Lab Number: Ext./Prep. Method: Date: 9509107-LCS EPA 3510 09/13/95 HYT

Analyst: Std. Source:

Std. Source: E950901-01W Sample Matrix/Media: WATER

Analytical Method: Instrument ID: Date: Time: Analyst: Units: QC Batch No:

EPA 8015 02893 09/21/95 22:10 GUD UG/L 95091315

· · · · · · · · · · · · · · · · · · ·							70 000000000000000000000000000000000000				72071313		
Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)		
DIESEL	ND	1,000	1,060	106	997	100	103	65	128	6.0	25		

Quality Assurance Results Summary - Matrix Spike/Matrix Spike Duplicate

Clayton Project No. 95091.08

Clayton Lab Number: Ext./Prep. Method: Date:

Analyst:

9509187-08A EPA 5030

09/20/95 JP V950630-01W

Std. Source: WATER Sample Matrix/Media:

EPA 8015/8020 Analytical Method: Instrument ID: 05587 09/20/95 Date: 16:10 Time: Analyst:

NAN Units: ug/L 950920B1 QC Batch No:

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID)	ND	5.89	6.13	104	5.96	101	103	81	118	2.8	20
ETHYLBENZENE	(PID)	ND	5.88	6.27	107	6.21	106	106	81	114	1.0	20
GASOLINE	(FID)	ND	500	476	95	474	95	95	80	120	0.4	25
TOLUENE	(PID)	ND	38.1	39.8	104	39.4	103	104	84	118	1.0	20
TOTAL XYLENE	(PID)	ND	36.4	37.8	104	37.5	103	103	85	115	0.8	20



REQUEST FOR LABORATORY **ANALYTICAL SERVICES**

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For Clayton U	se Only	Page_		of	\
Project No.					
Batch No.	95	091	08		
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2 Name	Rrades Nasle In	le			Purch	ase Order	No.					Job No.	10-	270	-01-004
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所 号 [Mailin	g Address 1575 Treat Blud &	c 201	- 60		불등	Compa	ny +>		of Ookland				Dept.		
	City, State, Zip Walnut Creek CA 94598					Addres	\$ <u>53</u>	ع رياء	ting	51	0	<u>t </u>			
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Date Heart	s Req.: Rush Charges Anthorized? Phone Yes Da No		Sample (check i	s are: f applicable)	ers	(Enter an	'X' in the	box be	low to it	ndicate	reque	st; Ente	era 'P' if	Preserva	tive added. *)
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	(Client Signature Must Accompany F	Request)													
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22345 Roethel Drive Novi, MI 48375 (313) 344-1770

Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040

400 Chastain Center Blvd., N.W. Suite 490

Kennesaw, GA 30144 (404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657

DISTRIBUTION:

WHITE - Clayton Laboratory YELLOW - Clayton Accounting - Client Retains PINK



(313) 344-1770 Edison, NJ 08837 Releve (908) 225-6040

REQUEST FOR LABORATORY ANALYTICAL SERVICES

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Telephone No. 500 255 (450 Telefax Date Results Req.: Rush Charges Authorized? Phone ☐ Yes ☑ No ☐	e / Fax Results Sample		ers			AN x below to	IALYSIS RE	QUESTED quest; Ente	era 'P' if P	reservative added.
Special Instructions: (method, limit of detection, etc.)		ring Water	tain		1.41	7 7	7 7	//		
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CLIENT SAMPLE IDENTIFICATION	DATE MATRIX/ SAMPLED MEDIA	AIR VOLUME (specify units	Num							FOR LAB USE ONLY
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Please return completed form and samples to one of the				listed beloy	v:		P	Dis	TRIBUTIO)N·
22345 Roethel Drive Raritan Center 400 Cl	hastain Center Blvd., N.W.							I		Clayton Laboratory
Novi, MI 48375 160 Fieldcrest Ave. Suite 4	190	Pleasanton,	CA 94	566				Y		Clayton Accounting

(510) 426-2657

1252 Quarry Lane P.O. Box 9019 Pleasanton, CA 94566 (510) 426-2600 Fax (510) 426-0106



October 16, 1995

Mr. Dale Swain ALISTO ENGINEERING GROUP 1575 Treat Blvd., Suite 201 Walnut Ćreek, CA 94598

> Client Ref.: 10-270-03-003 Clayton Project No.: 95094.01

Dear Mr. Swain:

Attached is our analytical laboratory report for the samples received on September 29, 1995. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

Please note that any unused portion of the samples will be discarded after November 15, 1995, unless you have requested otherwise.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,

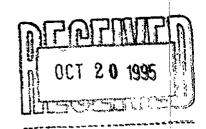
Harriotte A. Hurley, CIH

Director, Laboratory Services

San Francisco Regional Office

HAH/tjb

Attachments





Page 2 of 11

Analytical Results

for

Alisto Engineering Group

Client Reference: 10-270-03-003 Clayton Project No. 95094.01

Sample Identification: MW-2

09/28/95

Lab Number:

9509401-01A

Date Sampled: Date Received: 09/29/95 Date Prepared: 10/09/95

Sample Matrix/Media: Preparation Method:

WATER EPA 5030

Date Analyzed:

10/09/95

Method Reference:	EPA 8015/8020		Analyst:	NAN
Analyte		CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline				
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline		71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND 120 a	0.4 0.3 0.3 0.4 0.4 50
Surrogates a,a,a-Trifluorotol	lene	98-08-8	Recovery (%) 91	OC Limits (%)
				1

ND: Not detected at or above limit of detection Information not available or not applicable

a Purgeable hydrocarbons quantitated as gasoline do not match typical gasoline pattern.

Page 3 of 11

Analytical Results for

Alisto Engineering Group

Client Reference: 10-270-03-003 Clayton Project No. 95094,01

Sample Identification: MW-7

Lab Number: Sample Matrix/Media:

Preparation Method:

Method Reference:

9509401-02A

WATER EPA 5030

EPA 8015/8020

Date Sampled:

09/28/95 Date Received: 09/29/95 Date Prepared: 10/09/95 Date Analyzed:

10/09/95

Analyst: NAN

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND ND	0.4 0.3 0.3 0.4 0.4
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	94	50 - 150

ND: Not detected at or above limit of detection --: Information not available or not applicable

Page 4 of 11

Analytical Results

for

Alisto Engineering Group Client Reference: 10-270-03-003 Clayton Project No. 95094.01

Sample Identification: MW-5 Lab Number:

Preparation Method:

ample Matrix/Media: WATER

9509401-03A

EPA 5030

Date Sampled:

09/28/95 Date Received: 09/29/95 Date Prepared:

10/09/95 10/09/95 Date Analyzed:

Method Reference:	EPA 8015/8020		Analyst:	NAN
nalyte		CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline				
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline		71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND	0.4 0.3 0.3 0.4 0.4
Surrogates			Recovery (%)	OC Limits (%)
a,a,a-Trifluorotolu	lene	98-08-8	79	50 - 150

Not detected at or above limit of detection ND: Information not available or not applicable

Page 5 of 11

Analytical Results for

Alisto Engineering Group

Client Reference: 10-270-03-003 Clayton Project No. 95094.01

Sample Identification: MW-4

Lab Number:

9509401-04A

Sample Matrix/Media:

WATER

Preparation Method: Method Reference:

EPA 5030

EPA 8015/8020

Date Sampled: Date Received: 09/28/95 09/29/95

Date Prepared: Date Analyzed: 10/09/95

Ar

10/09/95

nalyst:]	NAN
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Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	18 ND ND ND ND 210 a	0.4 0.3 0.3 0.4 0.4
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	84	50 ~ 150

ND: Not detected at or above limit of detection Information not available or not applicable

a Purgeable hydrocarbons quantitated as gasoline do not match typical gasoline pattern.

Page 6 of 11

Analytical Results

for

Alisto Engineering Group

Client Reference: 10-270-03-003 Clayton Project No. 95094.01

Sample Identification: MW-6

Date Sampled:

09/28/95

≟ab Number:

o-Xylene

Gasoline

p,m-Xylenes

9509401-05A

Date Received:

09/29/95

ample Matrix/Media:

WATER

Date Prepared:

3.8

1.8

2400a

10/12/95

0.4

0.4

50

Preparation Method: EPA 5030 Method Reference: EPA 8015/8020

Date Analyzed:

10/12/95

Analyst:

NAN

nalyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
TEX/Gasoline			!
Benzene Ethylbenzene	71-43-2 100-41-4	12 9.4	0.4
Toluene	108-88-3	1.4	0.3

95-47-6

urrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	101	50 - 150

Not detected at or above limit of detection ND: Information not available or not applicable

Sample appears to be weathered gasoline.

of 11 Page 7

09/28/95

Analytical Results for

Alisto Engineering Group

Client Reference: 10-270-03-003 Clayton Project No. 95094.01

Sample Identification: QC-1

Lab Number:

9509401-06A

Sample Matrix/Media:

Preparation Method: Method Reference:

WATER

EPA 5030

Date Sampled:

09/29/95 Date Received: 10/12/95 Date Prepared:

Date Analyzed:

10/12/95

EPA 8015/8020

Analyst:

NAN

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes	71-43-2 100-41-4 108-88-3 95-47-6	12 7.5 0.9 2.8 1.4	0.4 0.3 0.3 0.4 0.4
Gasoline <u>Surrogates</u>		2600 ^a <u>Recovery (%)</u>	50 OC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	93	50 - 150

Not detected at or above limit of detection ND: --: Information not available or not applicable

Sample appears to be weathered gasoline.

Page | 8 of 11

09/28/95

09/29/95

Analytical Results

for

Alisto Engineering Group Client Reference: 10-270-03-003

Clayton Project No. 95094.01

Sample Identification: QC-2

ab Number:

ample Matrix/Media: Preparation Method: ≝ethod Reference:

9509401-07A WATER

EPA 5030

EPA 8015/8020

Date Sampled:

Date Received: Date Prepared: Date Analyzed:

10/10/95 10/10/95

Analyst: NAN

	A. 1. 0020, 0020		1	
knalyte		CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
TEX/Gasoline				
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline		71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND	0.4 0.3 0.3 0.4 0.4 50
urrogates			Recovery (%)	OC Limits (%)
a,a,a-Trifluorotolu	ene	98-08-8	90	50 - 150

ND: Not detected at or above limit of detection Information not available or not applicable

of 11 Page 9

Analytical Results for

Alisto Engineering Group

Client Reference: 10-270-03-003 Clayton Project No. 95094.01

Sample Identification: METHOD BLANK

Date Sampled: Date Received:

Lab Number:

9509401-08A

Sample Matrix/Media:

WATER

Date Prepared: Date Analyzed: 10/10/95 10/10/95

Preparation Method:

EPA 5030

Analyst:

NAN

Method Reference:

EPA 8015/8020

Method

Analyte	CAS #	Concentration (ug/L)	Detection Limit (ug/L)
BTEX/Gasoline			
Benzene Ethylbenzene Toluene o-Xylene p,m-Xylenes Gasoline	71-43-2 100-41-4 108-88-3 95-47-6	ND ND ND ND ND	0.4 0.3 0.3 0.4 0.4
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	89	50 - 150

Not detected at or above limit of detection ND: Information not available or not applicable



Date Received:

Date Analyzed:

Date Extracted: 10/04/95

Page 10 of 11

09/29/95

10/05/95

Analytical Results for

Alisto Engineering Group

Client Reference: 10-270-03-003 Clayton Project No. 95094.01

Sample Identification: See Below

9509401

Sample Matrix/Media:

WATER

Extraction Method: Method Reference:

Lab Number:

EPA 3510

EPA 8015 (Modified)

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)	Method Detection Limit (ug/L)
-01	MW-2	09/28/95	ND	100 b
-02	MW - 7	09/28/95	390 a	50
-03	MW-5	09/28/95	ND	a 00
-04	MW-4	09/28/95	ND	50
-05	MW-6	09/28/95	8400	50 b
-08	METHOD BLANK	- - '	ND	50

ND: Not detected at or above limit of detection Information not available or not applicable

PPH-D = Extractable petroleum hydrocarbons from C10 to C20 quantitated as diesel.

- b Detection limit increased due to presence of heavier hydrocarbons.
- Unidentified hydrocarbons present in diesel range; quantitation based on diesel.

Page 11 of 11

Analytical Results for

Alisto Engineering Group

Client Reference: 10-270-03-003 Clayton Project No. 95094.01

Sample Identification: See Below

09/29/95

Lab Number:

Sample Matrix/Media:

9509401

Date Received: Date Extracted: 10/04/95 Date Analyzed: 10/05/95

WATER

Preparation Method:

EPA 3510

Method Reference:

EPA 8015 (Modified)

Lab Number	Sample Identification	Date Sampled	TPH-O (ug/L)	Method Detection Limit (ug/L)
-01	MW-2	09/28/95	1300	200
-02	MW - 7	09/28/95	1200	200
-03	MW - 5	09/28/95	2000	200
-04	MW - 4	09/28/95	400	200
-05	MW-6	09/28/95	8000 a	200
-08	METHOD BLANK		ND	200

ND: Not detected at or above limit of detection Information not available or not applicable

TPH-O = Extractable petroleum hydrocarbons from C20 to C42 quantitated as motor oil.

a Unidentified hydrocarbons present in oil range; quantitation based on oil.

Quality Assurance Results Summary

Matrix Spike/Matrix Spike Duplicate Results

for

Clayton Project No. 95094.01

Page 1 of 3

Clayton Project No. 95094.01

Clayton Lab Number: Ext./Prep. Method: Date:

9509401-LCS EPA 3510

Analyst:

Std. Source: Sample Matrix/Media:

10/04/95 HYT

E950901-01W WATER

Analytical Method: Instrument ID: Date:

EPA 8015 02893 10/05/95 02:32 GUD UG/L

Time: Analyst: Units: QC Batch No:

95100470

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	ND	1,000	835	83	878	88	86	65	128	5.0	25

Clayton Project No. 95094.01

Clayton Lab Number: Ext./Prep. Method: Date: Analyst:

9509401-01A EPA 5030 10/09/95

WGK

V950313-02W Std. Source: WATER Sample Matrix/Media:

Analytical Method: Instrument ID: Date: Time:

EPA 8015/8020 05587 10/09/95 20:59 NAN ug/L 95100981

Analyst: Units: QC Batch No:

				16-5-2	MS	Mataiv Caika	MSD Recovery	Average Recovery	LCL	UCL	RPD	UCL
Analyte	Sample	Sample Result	Spike Level	Matrix Spike Result	Recovery (%)	Matrix Spike Duplicate Result	(%)	(% R)	(% R)	(% R)	(%)	(%RPD)
BENZENE	(019)	ND	3.92	3.91	100	3.94	101	100	79	125	0.8	20
ETHYLBENZENE	(PID)	ND	5.41	5.31	9 8	5.43	100	99	91	123	2.2	20
GASOLINE	(FID)	116	500	529	83	521	81	82	80	120	1.5	25
TOLUENE	(PID)	ND	26.8	25.2	94	26.8	100	97	84	118	6.2	20
TOTAL XYLENE	(PID)	ND	33.3	33.5	101	33.8	102	101	85	115	0.9	20

Clayton Project No. 95094.01

Clayton Lab Number: Ext./Prep. Method: Date: Analyst:

9510139-01C EPA 5030 10/13/95

FAK

Std. Source: Sample Matrix/Media: V950630-01W

WATER

Analytical Method: Instrument ID: Date: Time:

EPA 8015/8020 05587 10/13/95 20:57 FAK ug/L 951013B1

Analyst: Units: QC Batch No:

Analyte	A PARK AREA	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID)	ND	5.61	5.59	100	5.77	103	101	79	125	3.2	20
ETHYLBENZENE	(PID)	ND	8.61	8.46	98	8,79	102	100	91	123	3.8	20
GASOLINE	(FID)	ND	500	482	96	520	104	100	80	120	7.6	25
TOLUENE	(PID)	ND	36.0	36.1	100	37.7	105	103	84	118	4.3	20
TOTAL XYLENE	(PID)	ND	43.9	43.2	98	45.1	103	101	85	115	4.3	20

Quality Assurance Results Summary - Laboratory Control Samples (LCS)

for

Clayton Project No. 95094.01

Clayton Lab Number: 9509401-LCS Ext./Prep. Method: EPA 3510 Date: 10/04/95 Analyst: TYH

Std. Source: G950425-01W

Sample Matrix/Media: WATER Analytical Method: EPA 8015 Instrument ID: 02893 Date: 10/05/95 Time: 04:16 Analyst: GUD Units: UG/L QC Batch no: 95100470

Page 1 of 1

LCS Recovery LCLUCL Analyte Blank Result Spike Level LCS Result (%) (% R) (% R) OIL 1,000 ND 821 82 30 130



REQUEST FOR LABORATORY ANALYTICAL SERVICES

بسبب ر					
For Clayto	n Use Only	Page	<u></u> of		
Project No			04 -	•	
Batch No.	93	5094	UL		
Ind. Code		1	N.P.	``	4
Date Logg	ed In	X	3y // (M	<u>L</u>
1	Client Job No	. 10 - 2	270-	03 - 00	

			Date Logged In No By COM
P Name Date Swain Title &	Protect M	Anager	Purchase Order No. 201867 Client Job No. 10-270-03-002
concompany A 1.5to Engrang	Dept.		W Name SUSA GALES
Mailing Address 1575 Trans Bu	2 4348		Dept. Address 538 U atv St
Telephone No. (50) 255 1650 Telefax No. (5		22	Toky, State, 2P Carte Carte
Date Results Reg.: Rush Charges Authorized? Phone AFax	Results Samples		ANALYSIS REQUESTED (Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added.
Yes ⊠ No D 1		applicable)	
Special Instructions: (method, limit of detection, etc.)	☐ Drinki	· .	
Explanation of Preservative:	Collect State of	ted in the of New York	
ALIENT ANDLE IDENTICION TIAN	DATE MATRIX/ MPLED MEDIA	AIR VOLUME (specify units)	
MW-2: 1420 9/2	1245 1420	1 X 1 L	3 xp" xp" D AC
mw-7 1440			11 03
mw-5 1500			03
mw-4 1520		,	V Ou
mw-6 1540		\bigvee	3 1 0 65 0
QL-1 -		Uonl	Clo Ab
QL-7 '		J	21
Collected by: Dave WSALA	ic.	(print)	
CHAIN Relinquished by: Attrice (xt)	Date/Fime	195 10:3	Date Fine 10:
CUSTODY Relinquished by: Alexander	Date/Time	Received at Leo by A // WW	
Method of Shipment:			Sample Condition Upon Receipt: Acceptable Officer (explain)
Authorized by: (Client Signature Must Accompany Reques	Date		-
Please return completed form and samples to one of the Clay		Consultants, Inc	Inc. labs listed below: DISTRIBUTION:

22345 Roethel Drive Raritan Center Novi, MI 48375 (810) 344-1770

160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040

400 Chastain Center Blvd., N.W. Suite 490

Kennesaw, GA 30144 (404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657

2/92

Clayton Laboratory WHITE YELLOW -Clayton Accounting PINK - Client Retains